The Dissertation Committee for Steven Robert Boivie Certifies that this is the approved version of the following dissertation:

DETERMINANTS AND CONSEQUENCES OF BOARD-LEVEL HUMAN AND SOCIAL CAPITAL

Committee:

James D. Westphal, Supervisor

James W. Fredrickson

Pamela R. Haunschild

Robert Parrino

Wm. Gerard Sanders

DETERMINANTS AND CONSEQUENCES OF BOARD-LEVEL HUMAN AND SOCIAL CAPITAL

by

Steven Robert Boivie, B.S.; M.O.B.

Dissertation

Presented to the Faculty of the Graduate School of

The University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

Doctor of Philosophy

The University of Texas at Austin

May, 2006

Dedication

This dissertation is dedicated to my wife,

Stephanie Boivie.

Acknowledgements

Although it is my name alone as the author of this dissertation, I am certain that I could not have completed it without the help and assistance of many people to whom I must extend sincere appreciation. My advisor, Jim Westphal has been such a tremendous help throughout this process, that I feel that a mere thank you is not enough. His assistance, guidance, feedback, support, and friendship have been invaluable, and I will always be grateful for his help. My committee members have also been a great support. Jim Fredrickson, Pam Haunschild, Bob Parrino, and Gerry Sanders have provided time, comments, critiques, and insights that have vastly improved the quality of this research. I must also thank Kyle Lewis and Andy Henderson for their valuable help and feedback. Finally, I want to acknowledge the members of my cohort, Don Lange, and Daniel Chng. I feel extremely fortunate that we all entered at the same time and that we all became such great friends. I would not have enjoyed the process as much, or been as successful without you.

This dissertation was supported by grants from the Herb Kelleher Center and the IC² Institute at the University of Texas at Austin.

DETERMINANTS AND CONSEQUENCES OF BOARD-LEVEL HUMAN AND SOCIAL CAPITAL

Publication No._____

Steven Robert Boivie, Ph.D.

The University of Texas at Austin, 2006

Supervisor: James D. Westphal

Boards of directors are integral to the modern corporation and therefore frequently studied. However, recent corporate scandals as well as mixed empirical findings about the impact of board structure highlight the fact that there is still much to learn. The purpose of this dissertation is to incorporate the concepts of board-level human and social capital into research on corporate governance by proposing and developing the construct of director capabilities. I argue that corporate governance research must go beyond its traditional focus on structural independence to truly understand board effectiveness. In addition, I question the assumption present in virtually all prior research on corporate governance that outside directors have the ability to monitor and participate in strategic decision making. To do so, I draw upon a range of theories including human and social capital, information processing, incentives, and learning. By expanding our understanding of board effectiveness to include the capabilities of the directors, this dissertation provides a framework that should help governance researchers find more

consistent relationships between corporate governance and firm performance. In addition, this dissertation examines some determinants of director capabilities by examining how current governance trends and proposed independence reforms may negatively impact directors' willingness to serve on boards. I argue that recent actions that are supposed to improve boards may actually negatively impact boards by decreasing the overall quality of directors who choose to serve. I tested my hypotheses using archival data collected on 650 firms randomly sampled from the Fortune 1000 over the years 2000 through 2004. This resulted in a unique data set on the human and social capital of more than 5700 corporate directors.

Table of Contents

List of Tables

List of Figures

INTRODUCTION TO BOTH STUDIES

Boards of directors are of central importance to both practitioners and researchers. Directors and executives lead the massive modern corporations that dominate the global economy. Directors are often successful businessmen and women and are potentially quite powerful, and this combination creates a unique mystique around them. The purpose of this dissertation is to probe this mystique and examine boards from a novel perspective. The broad focus of this dissertation is to understand how director capabilities influence board effectiveness and in turn, what factors influence the selection and retention of these capabilities. Most previous work on board effectiveness has examined the issue from a limited set of perspectives, primarily through the lens of agency theory, but also using resource dependence and behavioral perspectives. Agency theory perspectives emphasize agency factors, like the independence of directors from management, that relate to the motivation of directors to serve shareholders.

This research is driven by the agency problem that arises because of the separation of ownership and control in the modern corporation (Berle & Means, 1932). Because the interests of the owners of the firm may not be perfectly aligned with the interests of the managers of the firm, managers may act in ways that are not in the best interests of shareholders (Jensen & Meckling, 1976). Governance research from an agency perspective looks at ways of correcting this problem usually through attempting to align the interests of managers with shareholders, or through the use of monitoring mechanisms such as independent directors. Resource dependence perspectives focus on the board's potential to help the firm gain access to necessary resources. Behavioral

perspectives have often focused on how the power of directors affects their ability to contribute to the board. However, by focusing primarily on these factors, what has been left unexplored is a broader human resource perspective of the board that considers whether and when directors have the capabilities to make valuable contributions to the firm.

Therefore, my first research question is: How do director capabilities, and factors that influence these capabilities, affect board effectiveness? Specifically, I am interested in how the human and social capital of the board, in combination with the incentives and information load of the board contribute to firm performance. Having established that director capabilities are important determinants of board effectiveness, I also consider how factors that have been emphasized in the literature and by stakeholders as primary determinants of board effectiveness may influence the selection and retention of board-level capabilities This leads to my second question: How are efforts intended to improve board independence affecting the level of human and social capital on those boards? Why might efforts that are aimed at improving board effectiveness actually hurt board quality? In this dissertation I develop two separate papers that address these two questions.

The broad purpose of this dissertation is to address the research questions above by incorporating the concepts of board human and social capital into research on corporate governance. Corporate governance research has often focused on the structure of the board without also looking at the capabilities of the board. Governance research has usually examined the board from an agency and/or power perspective, and has often excluded human resource explanations for board effectiveness. This dissertation seeks to expand our understanding of effective governance by exploring the factors that may

influence the level of human and social capital on a board, and by better understanding how human and social capital of the board may influence firm performance (Hillman & Dalziel, 2003). In order to do this, I have structured the dissertation into two separate papers. Study one develops a comprehensive model of board effectiveness that incorporates human and social capital constructs. This model is presented below as Figure 1. Study two explores how board independence will impact subsequent levels of human and social capital on the board.

STUDY ONE: DEVELOPING THE CONSTRUCT OF DIRECTOR CAPABILITIES INTO A MODEL OF BOARD EFFECTIVENESS

Introduction

Given the position of boards at the apex of the corporation, they have the potential to exert considerable influence. Therefore, it is clearly important to understand the role of directors in influencing these firms. However, it is also clear that what directors actually do and how effective they are at doing it varies significantly across firms (Lorsch & MacIver, 1989; Mace, 1986). Because of the importance and impact of large public companies, deficiencies in the level or quality of monitoring or advice giving by boards may have serious consequences for firms and their shareholders.

The importance of boards has not been unnoticed by researchers. Subsequent to Berle and Means' (1932) insight into problems that could arise because of the separation of ownership and control in the modern corporation, an extensive literature has arisen around the question of board effectiveness (see Zajac & Westphal, 2002 for a review). Much of the research on boards has drawn upon agency theory to suggest that the purpose of the board is to oversee management and to monitor managerial action on behalf of shareholders (Eisenhardt, 1989). This research has examined boards by looking at the structure of the board and inferring board effectiveness from that structure (Boeker & Goodstein, 1993; Kosnik, 1987). It is believed that boards filled with a greater percentage of outside, independent directors will be more effective (Mizruchi, 1983). This general proposition is also advanced in the literature on board power (Boeker,

1992). The power perspective on boards argues that boards filled with outsiders who are not beholden to management for their pay or position will have greater power, and will therefore combat the actions of self-interested managers (Boeker, 1992; Finkelstein & D'Aveni, 1994; Ocasio, 1994; Pearce & Zahra, 1991; Westphal & Zajac, 1995; Zajac & Westphal, 1996).

A different stream of research on boards has drawn upon the theory of resource dependence to suggest that the purpose of the board is to help the firm gain access to important resources (Pfeffer, 1972; Pfeffer & Salancik, 1978). More recently another stream of research has arisen that adds additional insight into the issue of boards; it introduces ideas from a sociological perspective to explain the purpose and the actions of boards of directors (Westphal, 1998, 1999; Westphal & Milton, 2000; Westphal & Zajac, 1998; Zajac & Westphal, 1994). One of the primary conclusions of this research is that an effective board may do more than just monitor executive action. Effective boards may also provide ongoing help and advice in strategic decision making (Westphal, 1999).

However, there is still uncertainty as to what contributes to board effectiveness. Work in the corporate governance literature suggests that there is a high degree of variation between boards in the level at which boards actually impact firm functioning, with regard to monitoring and to advice giving (Lorsch & MacIver, 1989; Mace, 1986). Reviews of the literature on structural independence have concluded that there is little evidence that increased independence actually improves board functioning and subsequent firm performance (Dalton, Daily, Ellstrand, & Johnson, 1998; Westphal, 1998). However, despite the mixed prior results, even the most recent empirical articles continue to assume that outsider-dominated boards signify effective governance

(Chatterjee, Harrison, & Bergh, 2003; Tihanyi, Johnson, Hoskisson, & Hitt, 2003). In addition, much of the literature on boards from a behavioral perspective has not examined board effectiveness directly, but has instead focused on indicators such as board involvement (Carpenter & Westphal, 2001; Westphal, 1999). This indicates that there is much still to learn about board effectiveness.

Another potential problem is that virtually all corporate governance research rests on an assumption that may be unrealistic. Specifically, corporate governance research from agency, power, resource dependence, and sociological perspectives all rest on the primary assumption that outside directors have the ability to monitor and participate in strategic decision making. While it may be safe to assume that directors have some ability and some desire, research from a number of perspectives suggests that we must question the universality of this assumption. For instance, work on boards from an agency perspective (for a review see Eisenhardt, 1989) relies on some of the principles and assumptions of an economic view of individuals. The economic view assumes that individual directors have the ability to gather, interpret, and process the large amounts of information relevant to the proper functioning of the companies on whose boards they sit, and that they are able to monitor and control the actions of executives in order to ensure that these actions will benefit shareholders. However, work in behavioral decision theory suggests that individuals are decidedly bounded in their rationality (Cyert & March, 1963) and that they are subject to limitations in their cognitive abilities (Tripsas & Gavetti, 2000). This bounded rationality should inhibit director's ability to complete their board duties effectively.

Taken together, the research discussed above suggests that we have more to learn about board effectiveness and that researchers must question not only the desire of directors to monitor, but also their ability to do so. One of the limitations of prior research is that it focused primarily on characteristics of boards like structural independence and linked independence to motivation, while not considering capabilities of boards. However, by developing a model of board effectiveness that includes director capabilities we should be better able to find stable linkages between the board and firm performance. Both the ability of the board and the desire of the board to contribute effectively to the firm are likely to vary across firms, and therefore it is important to develop a comprehensive model regarding the sources of this variation. This leads to the primary research question of this study: What factors contribute to directors' capabilities and how do these factors influence board effectiveness? I expect that in order to answer this question we must go beyond the current focus on board independence. Focusing on the structure of the board ignores the importance of director capabilities. Therefore, in order to answer this question I am drawing upon the theories of human and social capital as well as theories on motivation and information processing. Together, these theoretical perspectives will provide insight into director capabilities that should help us better predict board effectiveness.

Human capital is a type of capital or resource that is embedded within individuals (Becker, 1962). It is similar to skill or experience (Harris & Helfat, 1997). Human capital is the result of specific investments that individuals make by giving up time or other valuable resources to improve themselves. Examples of common measures of human capital include education and task relevant experience. In this study I draw upon theories

of human capital as one way of explaining board effectiveness. Human capital of the board should be a useful proxy for the ability of the board to contribute to monitoring and advice-giving.

Social capital is the goodwill that individuals are able to draw on by virtue of their social relations to gain access to information and influence (Adler & Kwon, 2002). Social capital results from relationships that individuals build and manage. Social capital is another factor that may contribute to board effectiveness. Boards filled with directors with high levels of social capital may have the necessary information and influence to do their job properly.

In addition to human and social capital I will be including theory on motivation and information processing demands, and how these two factors interact with the human and social capital of the board. Motivated directors should be more effective than unmotivated directors. For example, early work on governance stressed the idea that boards should be composed primarily of outsiders who are independent from management (Mizruchi, 1983). The underlying assumption is that outsiders who are beholden to CEOs will lack the desire to effectively monitor executive action (Westphal, 1999). While the motivation of directors is important to consider, as prior research has shown, motivation must be considered in concert with ability in order to understand performance (Mitchell, 1997). Motivation therefore, is expected to have an interactive relationship with director human and social capital. Information processing demands should also play an important role in boards' ability to function effectively because directors need to be able to interpret and process the large volumes of information they are presented with.

PURPOSE OF THE PROPOSED RESEARCH

The purpose of the proposed research is to better understand the determinants of board effectiveness and the relationships between those determinants. To do this I will develop a comprehensive model of board effectiveness intended to contribute to our understanding of the capability of boards to meaningfully contribute to the governance of the modern corporation. I plan to examine board effectiveness by examining director capabilities using a human resources framework where executives and directors are seen as valuable repositories of skill and experience. Specifically, this research focuses on developing a model of board effectiveness that is applicable to the largest public firms.

This study will address four primary research questions related to board effectiveness: (1) Does the level of human and social capital on a firm's board contribute to improved firm performance?, (2) Does the level of motivation of a firm's board members contribute to improved firm performance?, (3) Does the level of information processing demands of a firm's board contribute to decreased firm performance?, (4) Are there interactive relationships between the effects of human and social capital and motivation and information processing demands that affect firm performance? Below, I outline how the answers to these four research questions will contribute to organization theory.

CONTRIBUTIONS OF THE PROPOSED RESEARCH

The primary contribution of this study is the development of a more comprehensive model of board effectiveness that develops the construct of director capabilities. Previous governance research on boards has usually focused on board

characteristics considered important in an agency framework, such as structural independence, to predict firm performance, and often with mixed results (Dalton et al., 1998). I am arguing that the mixed past results may also be the result of a failure to consider director capabilities. By expanding our understanding of board effectiveness to include the capabilities of the directors, this study provides a framework that should help governance researchers find more consistent relationships between corporate governance and firm performance. Using director capabilities highlights the importance of examining directors using a human resources perspective, where directors' skills and experiences may provide unique contributions to the firm. Having a model that incorporates this critical construct should also help to strengthen the predictive link between the board and higher firm performance. It is the introduction of the construct of director capabilities that should help create a more powerful model of board effectiveness and makes this study valuable.

Through the development of the construct of director capabilities, this study makes a secondary contribution by highlighting the weakness of one of the core assumptions in the corporate governance literature. Virtually all research on corporate governance has assumed the capability of directors (see Hillman & Dalziel, 2003 for an exception). Specifically, research on boards from agency perspectives, resource dependence perspectives, and behavioral perspectives all assume that directors are capable of monitoring management and otherwise contributing to corporate governance. However, all of these streams of research have failed to test this assumption. This is particularly important, especially given the mixed past results mentioned above. By probing and developing a better understanding of one of the primary assumptions

underlying corporate governance research this dissertation makes an important contribution.

In suggesting the importance of director capabilities to board effectiveness, this research makes an additional contribution to the literature on corporate governance through its use of theory and constructs that are relatively novel in this area of inquiry. Theory on human and social capital has received limited attention in the boards literature and has never been empirically tested (Certo, 2003; Hillman & Dalziel, 2003). In addition, theory on information processing demands has never been applied directly to the board. By drawing upon and expanding different theoretical perspectives this paper helps to expand the range of theory available to governance researchers.

There are also a number of other smaller contributions made by this research. This study adds value to the literature on human and social capital by incorporating them into one model. These two concepts, while related, are usually examined separately. This research also contributes to the literature on corporate governance through the use of a unique mix of archival empirical data, primary survey data, and qualitative interviews with actual directors. This multimethod design incorporates rich qualitative interviews with empirical theory testing and allows this research to make a practical contribution as well as a scholarly contribution. The constructs and model tested here have implications both for practicing directors and for firms looking to improve their board effectiveness.

Theory Development and Hypotheses

In this section, I present theory and develop hypotheses related to the various model components of Figure 1. The focus here is on the board as a unit and how it affects

the firm. This is similar to other theorizing on boards of directors as decision-making units (Forbes & Milliken, 1999). It is important to note that I am proposing a comprehensive model that explains the ability of a given board to fulfill its duties effectively. Previous studies of boards have examined many different structural and social factors that may impact board functioning, but they have not put them together into one comprehensive model (see Zajac & Westphal, 2002 for a recent review). In addition, prior research on board effectiveness has had mixed success demonstrating that board characteristics, like independence, predict firm performance (Dalton et al., 1998). One of the reasons for this is because prior research has ignored the importance of director capabilities such as human and social capital (Hillman & Dalziel, 2003). By incorporating ideas about director capabilities into the model, we may have more success finding consistent links between the board and firm performance. Although director capabilities are important, one of the key features of the model presented in this study is the interactive nature of the capabilities of the board with some other components surrounding the board. The main effects of human and social capital are important, but it is equally important to understand how they moderate the effects of incentives and information processing demands.

This model of board quality presented in Figure 1 is an aggregate of the quality of the individual directors. The decision to aggregate the individual attributes of directors to the board level was done because in order to fully understand board effectiveness, we must examine the ultimate outcome of effectiveness, firm-level performance. Therefore, in this dissertation, the unit of analysis is the firm. Consequently, I must examine the board as a single unit. It is reasonable to assume that greater levels of director experience

and knowledge should improve board functioning. The issue of aggregation is discussed more fully in the methods section.

DIVERSITY

One question that inevitably arises when examining groups of individuals is that of the effects of diversity. I am not hypothesizing about the specific effects of board diversity on firm performance for a number of reasons. First, while evidence from other settings (such as TMTs) has found significant but mixed results (see Williams & O'Reilly, 1998 for a review of the diversity literature), the overall empirical effect of diversity on board functioning is much more limited (Alexander, Fennell, & Halpern, 1993; Goodstein, Gautam, & Boeker, 1994; Kosnik, 1990). Therefore, I would expect to find either null results or very small effects of diversity. In addition, the main argument for the benefits of diversity on a board is that a board needs to be filled with people with a wide range of functional backgrounds in order to make the best decisions (Charan, 1998). Much of this effect of diversity comes from the assumption that a diverse group would have access to unique knowledge (Williams & O'Reilly, 1998), which will be captured in my social capital construct.

The context of boards also provides some evidence that diversity may be less of a factor than previously expected. As mentioned above, empirical evidence on diversity in the context of boards is limited (Alexander et al., 1993; Goodstein et al., 1994; Kosnik, 1990). One reason for this may be that boards may function more as individuals interacting with management than as a group decision-making unit (Westphal, 1999). Westphal's discussions and surveys with directors found that many boards have a model

they operate under where the main impact of the board comes from providing advice on strategic decision-making and that this advice generally occurs from the CEO soliciting information from individual directors outside of board meetings (1999). Therefore, the effects of diversity are likely to be small since the impact of functioning as a group entity is lessened. . So while I acknowledge that it is important for a board to have access to diverse information, and that diversity may have a small effect, my focus is on the capabilities of directors that I believe should have the most explanatory power. However, in order to rule out alternative explanations, I do plan on controlling for diversity.

MONITORING AND ADVISING

The theory presented in this section argues that boards of directors filled with more qualified directors should lead to higher firm performance. The overall reasoning is that human and social capitals contribute to both directors' ability to monitor and to their ability to provide advice (Hillman & Dalziel, 2003). Both monitoring and advice-giving are important roles of directors and each type of action should increase firm performance. Monitoring involves exercising oversight over the choices that top management makes in the running of the firm (Jensen & Meckling, 1976), usually through aligning executive interests (Bhagat, Brickley, & Lease, 1985), direct ratification of decisions (Baysinger & Hoskisson, 1990), and executive dismissal (Mizruchi, 1983). In contrast, participating in strategic decision making involves providing advice and counsel on strategic issues to executives and participating in the decision-making process about how to effectively manage the firm (Westphal, 1999).

The importance of monitoring by directors is driven by ideas from agency theory (Jensen & Meckling, 1976). Agency theory perspectives on corporate governance are concerned with the potential problems that can arise because of the separation of ownership and control in the modern firm (Berle & Means, 1932). In the modern firm, shareholders delegate "decision management" to top executives and rely on directors to exercise "decision control" over these top executives to protect their interests (Fama & Jensen, 1983). Directors monitor executives to protect shareholders from the risk of moral hazard that can arise when the interests of an agent are not perfectly aligned with the interests of the principal.

Advice-giving by the board is also very important. Advice and counsel interactions between directors and top managers allow managers to draw upon knowledge and information that can be useful when making strategic decisions (Johnson, Daily, & Ellstrand, 1996; Lorsch & MacIver, 1989). Advice from outside directors may also help managers see new strategic opportunities (Judge & Zeithaml, 1992). Consider this perspective on the importance of the board providing advice, given by an institutional investor during a personal interview with the author:

> Corporations need to realize that a good board can be one their most valuable resources. The board should do more than just approve the decisions of management and make minor changes. The board should be involved with management and should be participating in strategic decision-making. They should be helping to shape the direction of the firm. Boards need to be involved at a high level of strategic leadership. They need to be consulting with management, not just watching over them.

As the paragraphs above demonstrate, in developing a model of board effectiveness, it is important to consider factors that should contribute to director's

capabilities to both monitor and provide advice (Hillman & Dalziel, 2003). In fact, research has found that greater director involvement in advice-giving and monitoring may each contribute to increased firm performance (Westphal, 1999). Therefore, a comprehensive model of an effective board must consider directors abilities to contribute to both types of actions. Secondly, at a conceptual level both tasks require outside directors to be able to understand the complexities and issues of the focal firm along with the actions of the officers of the focal firm. In order to monitor executive action, a director must understand the firm, its environment, and the actions undertaken by the executives. Effective advice-giving may require less firm-specific understanding than monitoring, but it still requires the ability to understand broad strategic issues and their impact on the firm. The model developed in this study argues that boards with more qualified directors should be better able to perform these duties and help their firms achieve higher levels of performance.

DIRECTOR INCENTIVES AND ACTION

Any discussion or model of director effectiveness must consider the issue of motivation. It is clear that in order to effectively monitor executive action or to provide advice and counsel on strategic issues, a director must choose to do so. A company's board may be filled with skilled and qualified directors, but if they do not take interest in their duties and actually attempt to monitor or provide advice, then the board's ability will not directly lead to positive firm outcomes. Therefore, in order to understand board effectiveness, we must consider what motivates directors.

What factors might influence director motivation? Research from an agency perspective provides a couple of answers. Early work from this perspective argued that directors may be motivated to properly fulfill their duties because they have a desire to maintain a reputation as a good director (Fama & Jensen, 1983; Hermalin & Weisbach, 1991; Weigelt & Camerer, 1988) or because they are legally obligated to do so (Baysinger & Hoskisson, 1990). For example, Fama and Jensen (1983) argued that there is a market for directors and that therefore outside directors would have an incentive to actively monitor in order to enhance their reputation as a director and therefore improve their chances of receiving multiple board appointments. There is some research evidence that broadly supports this idea of a market for directors (Srinivasan, 2004; Zajac & Westphal, 1996).

Agency theory also suggests that financial incentives may be a strong motivating factor (Bhagat et al., 1985). Most research on corporate governance from an agency perspective has focused on how incentives may be used as a tool to align the interests of management and shareholders (Boyd, 1994; Coughlan & Schmidt, 1985). However, the general agency problem may also apply to directors and shareholders. Directors are appointed as agents of the shareholders to act in their behalf to monitor and advise a separate group of agents, managers. However, as the literature shows, there is no guarantee that the interests of directors are perfectly aligned with those of shareholders (Mace, 1986). Some directors may have little or no desire to actively take a role monitoring executives or using their time to provide advice. This is where incentives may play a key role. Just as with executives, proper director incentives may align director's interests with those of shareholders. Incentive contracting is the "first-best" solution to

the agency problem, because it eliminates the gap between the interests of the two parties (Beatty & Zajac, 1994).

There are a number of ways that director compensation may lead to greater director effort. Directors are usually executives of other large companies. If a director is properly compensated, he/she will be more likely to put forth the necessary effort to fulfill his/her duties effectively. For public companies a certain level of compensation may be necessary before directors will feel any duty towards the company and its shareholders. For example, a director may feel that a certain level of compensation indicates a respect for their time and expertise. This idea was articulated by one of the directors to whom I spoke. He said:

> There is a realization by companies that directors have to spend more real time to do their job. Directors now need to spend more time outside of meetings to prepare. Consequently, meeting fees are starting to rise. It is getting to be that if you are a director for a decent sized company then the pay is a lot of money, especially in the eyes of people who don't make a lot. However, this is necessary. You have to pay qualified directors what they are worth. In my situation, if I am offered a directorship that only pays $25,000 a year, it is very easy to turn that down. That is not very much money for me. Director compensation needs to be at a market rate… New directors expect to be compensated for their time.

In addition, contingent pay may help motivate directors to action by putting a portion of their wealth at risk (Kosnik, 1990). For example, Yermack (2003) found that although the absolute level of compensation was much smaller than that paid to executives, the structure of director pay plans was very similar to the structure of executive compensation plans. In fact, it seems reasonable to suggest that contingent pay may work better for directors than it does for managers. With managers, one of the dangers of contingent pay is that high levels may cause managers to become overly risk

averse (Beatty & Zajac, 1994; Zajac & Westphal, 1994). This danger is less likely for directors, because directors will likely have less of their overall compensation tied to the focal firm.

Finally, overall stock ownership in the firm may cause the director to feel invested in the firm's outcomes. A minimum level of stock ownership by directors may help investors because it will ensure that directors have some "skin in the game" (Felton & Watson, 2002). When a director is also a partial owner of the firm, they will identify with the firm, and they will be invested in seeing the firm do well (Lorsch & MacIver, 1989). In fact many boards seem aware of this fact and either make large awards to new directors, or they require new directors to buy a certain mass of stock when they join the board (Yermack, 2003). This quote from a director illustrates the value of stock options and stock ownership:

> Directors should own an amount of stock that is meaningful to them . . . They need to own this meaningful amount either by being granted options, or by purchasing it when they are first appointed. Ideally, director compensation should be about ½ cash and about ½ stock. The reason for this is that because of current tax laws a compensation structure like this really means that a director is working for essentially $0 unless the value of the company increases. This is great for shareholders. I used to be a director of a private company that did not have stock to grant me and so I was paid only in cash. I want to tell you that I think and act very differently for those companies in which I have a stake than I did as a director for that company.

This leads to the following hypotheses:

General Hypothesis 1: The greater the level of incentives provided to a company's board, the higher the firm's subsequent performance.

H1a: The greater the average level of total compensation provided to a company's board, the higher the firm's subsequent performance.

H1b: The greater the average level of contingent compensation provided to a company's board, the higher the firm's subsequent performance.

H1c: The greater the level of firm ownership among directors, the higher the firm's subsequent performance.

HUMAN CAPITAL OF DIRECTORS

One factor that may influence the ability of directors to contribute effectively to their duties is the level of the directors' human capital. The concept of human capital has been around for some time, but the first major theoretical treatment of the subject was done by Becker (1962). Becker was initially interested in how education was related to future earnings of individuals. However, while studying that problem he developed a more general theory of human capital. Specifically, he defined human capital as resources that are embedded within people (Becker, 1962). He argued that individuals make choices to invest in productivity-enhancing activities, and that these investments result in human capital. Some work uses the term human capital interchangeably with the terms knowledge, skill, or experience (Harris & Helfat, 1997), but according to Becker's original definition it encompasses all of those things.

Differences in intelligence or ability may result from inherent individual differences, but human capital is always viewed as a result of individual choices, like investment in education or experience (Finkelstein & Hambrick, 1989). This makes it a useful concept for study and research because it is something that both individuals and firms can be aware of and can influence. Research on human capital originated in the economics literature and has been primarily used to predict an individual's wages or job

mobility (Antel, 1986; Brown, 1976; Eriksson, 1991; Mincer, 1997). However, the concept of human capital has also been used within the management literature (Finkelstein & Hambrick, 1989; Harris & Helfat, 1997).

Much of the literature in both economics and management that uses the notion of human capital does so in a very perfunctory way (Brown, 1976; Galunic & Anderson, 2000; Hillman & Dalziel, 2003; Mincer, 1997; Pennings, Lee, & van Witteloostuijn, 1998). The idea of human capital is so intuitively appealing that it has not been really examined. For example, many studies that hypothesize about human capital simply state that it is valuable and then quickly move to measurement issues. However, before making predictions about why human capital may be valuable to the board, it is important to really understand what human capital is and where it comes from.

Going back to Becker (1962), we see that he viewed human capital as the result of human specific investments. Much as an individual can take money and make investments that result in stocks of financial capital, Becker argued that individuals make choices about investments in their time that can result in stocks of human capital. The idea is that individuals make choices about which productivity-enhancing activities to pursue in order to maximize future income and psychic benefit (Gimeno, Folta, Cooper, & Woo, 1997). The result of these choices and time-investments is human capital. Human capital accrues through the application of time and energy devoted to learning through education or experience. This stock of capital can then be used in subsequent situations. Initially this theory was applied to wage differences and job mobility. The argument is that measurable differences in human capital (such as experience and education) are visible to employers a priori, and result in higher productivity ex post, and

that therefore employees with these stocks of resources should be able to extract higher wages and have greater job mobility.

While human capital is not a direct measure of ability, it may be used as an appropriate proxy because it is correlated both with ability and with the outcomes of ability (Becker, 1962; Hillman & Dalziel, 2003). This notion has been broadly supported in the economics literature (Antel, 1986; Brown, 1976). Within the management literature, human capital has also been used to predict higher compensation for individuals, especially CEOs and other top executives (Carpenter & Wade, 2002; Finkelstein & Hambrick, 1989; Gerhart & Milkovich, 1990; Harris & Helfat, 1997; Weiss, 1995). One of the common themes in both the management and economics literature has been that human capital is often used to predict individual level outcomes.

However, in the management literature there has also been extensive use of human capital explanations of firm-level outcomes. For example, human capital explanations have been used to predict greater success of entrepreneurial ventures (Bruderl, Preisendorfer, & Ziegler, 1992), and greater performance in service-oriented firms (Hitt, Bierman, Shimizu, & Kochar, 2001). In addition, executive characteristics such as education, experience and other skills have been shown to predict higher firm performance in a number of settings (Bantel & Jackson, 1989; Finkelstein & Hambrick, 1996; Huselid, 1995). This line of research provides strong support for the idea that human capital may have important effects on firm-level outcomes such as performance. For example, a recent study found that the stock market reacted strongly to the deaths of CEOs who had high pay premiums, which the study viewed as proxies for high levels of human capital (Combs & Skill, 2003).

Another perspective in strategy also provides some indirect support for the idea that human capital may be important for firm-level outcomes. The resource-based view argues that firm-specific assets and capabilities may lead to greater organizational performance (Barney, 1991). Managerial skill may be one such important resource that fits the framework of being valuable, rare, and difficult to imitate (Castanias & Helfat, 1991; Pennings et al., 1998). For instance, US multinational firms whose CEOs had human capital in the form of international assignment experience had higher firm performance (Carpenter, Sanders, & Gregersen, 2001).

Taken together, these perspectives provide evidence that human capital may be important to firm-level outcomes. Therefore, it is reasonable to assert that human capital at the board level may contribute to board effectiveness. As noted above, the purpose of a board is to exercise decision control over management (Fama & Jensen, 1983) as well as to provide advice and counsel (Westphal, 1999). Both of these tasks will be improved by increased levels of human capital on the board.

The modern corporation is often very large and complex. For example, General Electric had over $130 billion dollars in revenue in 2002 from hundreds of products distributed across at least 13 major divisions along with numerous subsidiaries. This size and complexity make it difficult for directors to monitor executives because it is hard for them to understand everything about the firm. This size and complexity also make it more difficult to provide meaningful advice. Directors with greater experience, education, and other valuable skills will be better able to effectively contribute to the firm than directors without these types of experiences. Human capital may therefore be a reasonable component of the ability of a director (Bruderl et al., 1992; Hillman &

Dalziel, 2003). For example, a common task of boards is to oversee and/or approve acquisition decisions. Acquisitions are complex decisions and can be difficult to implement correctly (Haleblian & Finkelstein, 1999; Zajac & Bazerman, 1991). Directors with relevant prior experience in similar settings should be better able to evaluate the potential value of any acquisition targets than directors who have no experience dealing with acquisitions. It is also clear from practitioner oriented books and articles that more experienced and skilled directors are perceived to be valuable (Charan, 1998; Finkelstein & Mooney, 2003).

This idea about the value of human capital was also supported in my discussions with directors and institutional investors. For instance, an institutional investor said:

> … (A director) needs to have a broad set of experiences and skills in order to contribute across a broad range. Many board members have experience in only one particular domain, like accounting, and that narrow experience influences their thinking and their ability to contribute. For example, having such a narrow experience makes everything they look at seem like an accounting issue. It is important to have a broad range of experience because directors are required to make decisions about a wide range of factors.

> …Remember, directors are always at an informational disadvantage in comparison with management. An effective director overcomes this by being persistent and using their broad experience base to really understand the issues facing the company.

Another director told me:

> An effective director is someone who is informed and conversant with the company's business. A good director is able to look at the nitty-gritty details like the committee work, but is still able to see at the higher levels. They are able to ask the big questions. Is the company competing in its market? Is the company positioned well in its industry? Why or why not?

What these quotes really illustrate is the difficulty and complexity of contributing in a meaningful way to the strategy and governance of large public firms. In order to do this effectively, boards need to be filled with directors that have high levels of human capital.

In order to understand how human capital may create value, it is important to consider the different types of human capital. Human capital has been classified as either general or specific (Bruderl et al., 1992; Harris & Helfat, 1997). General human capital is a kind of skill or experience that is valuable across settings. Education is often used as an attribute associated with general human capital (Bruderl et al., 1992) because it is assumed that the benefits of education involve not only the specific information learned, but the skills associated with learning across situations. Thus a bachelor's degree is seen as more valuable than a high-school diploma not just for the specific information learned, but because of the perceived improvement in the individual's overall ability to learn. Specific human capital on the other hand is tied to a specific function or location and is developed through direct experience rather than more general learning. Both types of human capital will be helpful for directors trying to monitor or provide advice to executives. I will now talk briefly about a few types of human capital and how they might be linked to more effective boards and increased firm performance.

Education Level

Education level is a very common indicator of human capital (Bantel & Jackson, 1989; Hambrick & Mason, 1984; Pennings et al., 1998; Wiersema & Bantel, 1992). The reason that increased formal education is a useful indicator of human capital is because it

helps individuals develop more effective ways of learning and processing information. Formal education promotes meaningful versus rote learning of information (Singley & Anderson, 1989). Formal education also shapes individual's mental models, and teaches people cognitive short-cuts (Hitt & Tyler, 1991). Learning theory suggests that teaching people to generate analogies allows individuals to draw principles and abstract structures out of specific situations (Loewenstein, Thompson, & Gentner, 1999). Learning theory also suggests that the process of generating analogies does not always happen automatically and is something that can be learned (Loewenstein et al., 1999). One of the purposes of most formal education programs is to help students learn general principles and theories that they can apply to multiple problems. For instance, most professional programs like law and business require students not only to learn information, but also to apply the principles gleaned from that knowledge across different cases and examples.

The ability to generate abstract principles from specific situations is one of the key differences between a novice and an expert (Chi, Glaser, & Rees, 1982; Singley & Anderson, 1989). Research has shown that the difference between an expert and a novice is non-trivial and is especially important in situations where the problems are complex (Loewenstein et al., 1999; Singley & Anderson, 1989). Experts solve problems more quickly and with fewer errors than novices (Chi et al., 1982). While this aspect of "expertness" is clearly beneficial, the main benefit of being an expert appears to come from the way experts organize knowledge and approach complex problems. Experts start by approaching problems from a qualitative perspective (Chi et al., 1982). Experts organize and structure knowledge in a more systematic and usable way. This is contrasted with novices who are limited in the "architecture of their cognitive systems or processing

capabilities" (Chi et al., 1982: 71). Because of this limitation, novices have an inability to use powerful search heuristics and an inability to detect important cues in the problem which leads to suboptimal outcomes. Experts make better use of the information available to them by avoiding the superficial features of problems and by focusing on deep, functional relationships between this problem and other similar problems (Chi et al., 1982).

Research in organizations has also argued for the benefits of increased levels of formal education for reasons similar to those articulated above. Top management team researchers have reasoned that individuals with high levels of education "are likely to engage in boundary spanning, tolerate ambiguity, and show an ability for 'integrative complexity'" (Wiersema & Bantel, 1992: 99). Organization researchers have also proposed that high levels of education will give TMT members a greater capacity for information processing and a better ability to distinguish among different stimuli (Wiersema & Bantel, 1992). These ideas are clearly similar to the notions of expertness in the learning literature. In addition, empirically these ideas have been supported as higher levels of TMT education have been associated with both greater firm innovation (Bantel & Jackson, 1989; Kimberly & Evanisko, 1981) and greater organizational change (Wiersema & Bantel, 1992).

The types of learning and knowledge structures generated by increased formal education will be valuable for directors. Directors are required to understand large amounts of complex information quickly, and having knowledge structures that promote this will help them do their job more effectively. Directors with more education should be

better able to interpret and group the information presented to them. Therefore boards filled with directors with high levels of formal education should be more effective.

Total Management Experience

A director is expected to understand and evaluate the actions of top managers and how those actions will impact the firm. Consider this quote by a director:

> Basically, directors have to make the major decisions; they have to come to grips with the issue of where the company should be going. For example, should the company be borrowing a lot of money as a matter of policy and leveraging itself, as opposed to contracting and not leveraging itself? Should the company go into a new line of business? Those are decisions made at the board level, but there is a very fine line between what the board does and what the CEO does (Lorsch & MacIver, 1989: 66).

What this quote illustrates is that the role of a director is increasingly more than just reading financial statements or setting compensation contracts. Executive and managerial work is very complex (Finkelstein & Hambrick, 1996; Lorsch & MacIver, 1989; Mintzberg, 1975). In addition, managerial skill is complex, rare, and difficult to acquire (Castanias & Helfat, 1991; Pennings et al., 1998). Directors are involved with the firm at a high-level and prior managerial or executive experience should be valuable.

One of the ways human capital is acquired is through experience (Harris & Helfat, 1997). For instance, research has shown that experience with making certain types of decisions leads to better decision-making performance in the future in similar situations (Taylor, 1975). In fact, much like education above, experience is another way someone can move from being a novice to being an expert (Chi et al., 1982). Experience allows the transfer of tacit knowledge (Singley & Anderson, 1989) that may be difficult to acquire

simply through education or reading. As tacit knowledge is acquired, individuals are better able to build knowledge structures that promote more powerful search heuristics (Chi et al., 1982). Experience also helps individuals see commonalities between situations and develop principle-centered knowledge structures (Loewenstein et al., 1999). These knowledge structures enhance future problem solving by helping experts solve problems more quickly, and by facilitating individual ability to focus on relevant information cues (Singley & Anderson, 1989).

By helping individuals become experts in managerial decision-making, prior managerial experience is directly related to greater expertise and skill (Pfeffer & Davis-Blake, 1986). For example, one of the jobs of a board of directors is to choose new CEOs. Understanding the job of a CEO and who would make a good CEO will be difficult without top management experience. Therefore, boards filled with more experienced directors should be more effective at evaluating the actions of managers and providing strategic advice.

Home Company Performance

While direct management experience should help a director build human capital, another indicator should be the level of success experienced by directors. Although firm performance is affected by numerous factors, studies have shown that top executives' characteristics and decisions also influence firm performance (Finkelstein & Hambrick, 1996; Wiersema & Bantel, 1992). Directors who come from companies with high levels of performance should be better able to evaluate the actions of the focal firm's management. If superior management skills are rare and difficult to acquire (Castanias &

Helfat, 1991), then these skills should lead to higher firm performance. Directors from high performing firms are more likely to give advice that is better and more relevant than directors who come from low-performing firms. As argued above, it should be important to have directors that have prior management experience. Performance of their home companies may in some way indicate the quality of that experience.[1]

Firm Tenure

Firm tenure is a proxy for firm-specific human capital (Buchholtz, Ribbens, & Houle, 2003). As mentioned above, modern corporations are very large and tremendously complex. It is difficult to truly understand such complex organizations. The longer a director has served on the board of a firm, the more that director will know about the company and the greater will be that director's expertise. A board that is filled with high tenure directors should be better able to give advice and should be better able to monitor executive action. One example where firm-specific expertise is crucial is the decision to make an acquisition. Typically, the value of an acquisition is based on proposed synergies between the target firm and the acquirer that will enhance revenue and make up for any premium paid. However, synergies are ambiguous and difficult to quantify, and must be based on very specific information about the focal firm. A director with greater levels of firm-specific knowledge will be better able to evaluate the wisdom of such a decision.

[1] Some theoretical perspectives argue that it is more useful to have experienced a variance in outcomes rather than generally positive outcomes (Beckman & Haunschild, 2002). However, my focus theoretically is on proxies for ability (where generally more is better).

It must be noted that in studies of top managers, firm tenure often has a negative effect on firm performance (Finkelstein & Hambrick, 1990; Hambrick, Cho, & Chen, 1996; Miller & Shamsie, 2001; Wiersema & Bantel, 1992). This relationship is a result of over-commitment by top managers to prior decisions and the current status quo of the firm. Managers become rigid in their decision-making and firm performance suffers. I do not expect this same relationship to be true for director tenure. Directors are less vulnerable to these processes due to the different nature of director tenure.

Directors spend much less time with a firm than executives. They come in for periodic meetings, approve strategic decisions, offer advice, and provide useful counsel. Directors do not stake their personal reputations on strategic decisions in the same way top managers do, and are therefore less likely to be prone to the process of over-commitment to these decisions. Consequently, in this situation, greater levels of direct experience with the firm should be beneficial because it should give directors the needed time to overcome the significant informational challenges associated with being an effective director. Executives and directors need to develop firm-specific knowledge to guide decision making (Thomas, Clark, & Gioia, 1993), and the only way to gain such knowledge is through prior experience with the firm. For example, consider this quote about a proposal to limit director terms of service: “I worry a little about its proposal that board terms be limited to six years, because it’s hard to make a contribution as a good director in any less time than that (Knowledge at Wharton, 2003b).” Also, information coming in to the firm is ambiguous in nature and needs to be interpreted through the lens of the firm (Lorsch & MacIver, 1989; Thomas et al., 1993). The only way directors will

have the necessary insight to be able to interpret this information correctly is if they are familiar with the firm and how it operates.

Strategic Relatedness

Prior experience with strategically similar companies could have benefits for two main reasons. The first reason they might have benefits is not a human capital explanation. Serving on the boards of strategically related companies may provide directors with access to useful information. As Useem noted, "Direct involvement in other companies' affairs replaces an awful lot of reading . . . it's a hell of a tool for top management education" (1982: 209-210). Second, directors rely on schema driven knowledge structures for decision-making, and these schema are heavily influenced by directors' prior experience (Carpenter & Westphal, 2001). Experience in strategically similar companies should help build knowledge structures that are relevant to the types of problems likely to be confronted by the focal firm (Haunschild, 1993; Useem, 1982). These relevant and useful knowledge structures are a form of human capital. While, as I will argue below, I do believe access to useful information should be valuable for directors, I believe that the value of strategic relatedness is primarily related to the second, human capital explanation. The effect of the knowledge structure created should be more important than the value derived through access to contacts (Useem, 1982). It is largely the value of the experience that is useful. This is because direct experience with strategically similar problems and issues is more likely to be important at the focal firm (Haunschild, 1993). Consider for instance the issue of international expansion. Directors with experience in companies that have expanded internationally should be better able to

help the firm understand the specific types of problems and situations they might face. Therefore, it is not surprising that recent practitioner oriented articles have also argued that it is important to have board members with strategically relevant experience (Charan, 1998; Finkelstein & Mooney, 2003).

Therefore I propose the following:

General Hypothesis 2: The greater the level of human capital on a company's board, the higher the firm's subsequent performance.

H2a: The greater the total level of education on a company's board, the higher the firm's subsequent performance.

H2b: The greater the level of total management experience on a company's board, the higher the firm's subsequent performance.

H2c: The greater the average performance of directors' home companies, the higher the firm's subsequent performance.

H2d: The greater the average firm tenure of a company's board, the higher the firm's subsequent performance.

H2e: The greater the average strategic relatedness of directors' home companies, the higher the firm's subsequent performance.

SOCIAL CAPITAL OF DIRECTORS

Social capital is another factor that may contribute to the ability of directors to provide quality monitoring and advice. Unlike human capital, with its roots in economic theory and its lengthy history, social capital is a much more recent idea with roots in

literature from divergent social science disciplines (Adler & Kwon, 2002). The basic concept of social capital is that social ties arising from both work and non-work relations can be used for many different purposes. This leads to the notion that social structure has value that is appropriable (Coleman, 1988).

Adler and Kwon (2002) highlight a number of similarities between social capital and other forms of capital like human and financial capital. First, like other forms of capital, social capital is an asset that resources (e.g. time, attention) can be directed towards in the hope of future benefits. Individuals can devote effort to maintaining or building their networks in order to enhance future opportunities. Second, although it may be less liquid than other forms of capital, social capital is both appropriable (Coleman, 1988) and convertible (Adler & Kwon, 2002). Third, social capital can be a substitute and/or complement to other assets. For example, social capital caused by trust may reduce transaction costs (Uzzi, 1997). Fourth, social capital needs maintenance as do physical and human capital. Fifth, some forms of social capital are "collective goods" like clean air or other public resources and are not the private property of those who benefit from them (Coleman, 1988).

However, while social capital is similar to other forms of capital, it also has some unique properties. First, unlike most other assets, social capital arises not from actors directly, but from the relationships between actors (Coleman, 1988). Second, unlike most other types of capital, the investments that lead to social capital are very difficult, if not impossible, to measure in a quantifiable way (Adler & Kwon, 2002).

It must be acknowledged that social capital and human capital are related and even complementary (Coleman, 1990). However, they are conceptually distinct and the

investments needed to create social capital are fundamentally different from the investments needed to create human capital (Burt, 1997). As mentioned above in the discussion on strategic relatedness, social capital may provide access to unique sources of information that cause specialized knowledge structures to develop resulting in greater human capital. In addition, high levels of social capital may lead to networks filled with better contacts. However, the relationship between human and social capital, while interesting, is not the focus of this dissertation. I am interested in examining how the levels of human and social capital of a group of individuals at one point in time affect their ability to help the firm. Therefore, while I acknowledge the potential recursive relationship between human and social capital, I am not directly examining it in this study.

Social capital can be viewed as the aspect of the social structure that creates value and facilitates action by individuals (Coleman, 1990). Social capital creates value because it may be transformed into other forms of capital like human capital (Coleman, 1988) or physical capital (Adler & Kwon, 2002). Social capital has been empirically shown to have a number of valuable benefits (see Adler & Kwon, 2002 for a summary). Here I am following Adler and Kwon's definition of social capital: "Social capital is the goodwill available to individuals or groups. Its source lies in the structure and content of the actor's social relations. Its effects flow from the information, influence, and solidarity it makes available to the actor" (2002: 23). I am also following recent approaches by considering the effects of both the structure and content of social ties (Adler & Kwon, 2002; Seibert, Kraimer, & Liden, 2001).

The definition of social capital above provides three main benefits of social capital: information, influence, and solidarity. Solidarity is beneficial to groups or organizations in social networks with high closure, because it creates a strong set of shared norms and it leads to greater commitment and less monitoring (in this way it is similar to the benefits of trust) (Adler & Kwon, 2002). While there are clear theoretical and empirical arguments for the general benefits of solidarity, it is less clear how solidarity arising from social capital would positively influence board effectiveness. Also, indicators of solidarity would be difficult, if not impossible, to measure in this setting. Therefore, for the purpose of this study I will consider how information and influence arising from a board's social capital may impact board effectiveness.

The acquisition of information is costly. It requires attention, which is always in short supply. However, information can be obtained through social relations that are maintained for other purposes (Burt, 1992; Coleman, 1990). Directors are embedded within networks of individuals that may provide differential access to valuable information (Granovetter, 1985). Directors with greater social capital through more board ties, or connections to prominent others will have better access to information. This will improve their ability to monitor executive action and their ability to provide advice on strategic issues. Research has shown that social networks may give actors access to information that leads to greater innovation (Burt, 1987; Coleman, Katz, & Menzel, 1966; Powell, Koput, & Smith-Doerr, 1996; Rogers, 1995). Uzzi (1997) also found that social networks led to fine-grained information exchange, which is exactly the type of information that is likely to be valuable for directors. Directors are faced with complex issues and problems. For example, consider the process of an acquisition. Acquisitions

are very tricky to implement successfully, and directors that have strong social ties may have access to very specific information about what pitfalls to avoid when implementing an acquisition and will be able to provide this advice to the executives of the firm.

Social capital may also provide a board with greater influence and power. The literature on power and social influence is extensive within the study of organizations (Belliveau, O'Reilly, & Wade, 1996; Boeker, 1992; Brass, 1992; Pfeffer & Salancik, 1978; Salancik & Pfeffer, 1974). Social capital may give a board more power in its relationship with management and allow directors greater influence in decision-making (Westphal & Zajac, 1995; Zajac & Westphal, 1996). Social capital may also give a board power and influence in the eyes of external stakeholders (Burt, 1983; Cool & Henderson, 1998; Filatotchev & Bishop, 2002; Uzzi, 1999). Prominent board members may be able to influence governmental legislation so that it is more favorable to the corporation (Domhoff, 1983; Useem, 1982). In addition, boards filled with highly influential people may secure more favorable access to resources and capital (Domhoff, 1983; Uzzi, 1999). Also, boards filled with prestigious directors may help the firm's decisions to be seen as more legitimate and acceptable to the market. Therefore, having a board filled with highly-connected, influential directors is likely to lead to improved firm performance.

As I did with human capital, I will now briefly discuss a few specific types of social capital and how they might be linked to more effective boards and increased firm performance.

Total Board Ties

The number of interlocks a company has through its board should help the firm in two main ways. First, the number of ties a director has to other boards of directors should increase that director's overall level of information diversity. Information is valuable, but is often difficult to acquire. The connections between corporate directorships create a real and viable social network through which information and influence may flow (Koenig & Gogel, 1981). Being highly connected may give directors access to information that leads to more innovative ideas for the focal firm (Powell et al., 1996; Rogers, 1995). For example, board interlocks have been shown to be a source of information about practices such as acquisitions (Haunschild, 1994). Highly connected directors may also be more able to get information that is unique or difficult to transfer (Uzzi, 1997). This information should be exceptionally valuable. When I asked directors about the importance of board ties, I got responses that echoed this idea. Following are two responses that exemplify this nicely:

> I think it is generally positive to have other board appointments. You are usually on boards in different industries. This is useful because you learn a great deal. I believe that there is more to be learned outside of your own sandbox. You learn more by examining issues from a different perspective.

> One of the things that organizations suffer from is isolation. It is difficult to get information across organizational boundaries. Whatever you can do to improve those information flows will be beneficial.

Another way total board ties should be helpful is because being highly connected gives a firm power and prestige. The number of directorships an individual has is a measure of director power because it allows a director to absorb uncertainty in the institutional environment (Finkelstein, 1992). Also, as we learn from the literature on

social networks, information itself is a source of power (Burt, 1992), and as argued above, connections should increase directors access to information. Directorships may be used to establish ties to important people in the business elite (Useem, 1982). These connections to many powerful others create a network of influence through which the director can try to benefit the firm (Useem, 1979).

Total board ties are also an indicator of a firm's structural position within the network of interlocked firms (centrality). Network position may also give a firm power and influence. There has been a tremendous amount of research that has focused on the influence of advantageous structural positions within networks (Brass & Burkhardt, 1992; Burt, 1992; Gargiulo & Benassi, 2000; Gulati, Nohria, & Zaheer, 2000). Previous research on board interlocks has shown that connections between firms because of interlocked directors can influence firm action (Davis, 1991; Gulati & Westphal, 1999; Haunschild, 1993). Firms that are more central in the network of interlocked firms should be better positioned to have access to relevant information and also to have high social status.

Performance of Interlocked Companies

When the companies that a director is connected with do well, that should increase his/her prestige and reputation (Fama, 1980; Finkelstein, 1992). It should also be an indicator, although indirectly, of that director's access to useful or quality information. Being a director of a high performing company should also indicate that the director understands effective board processes and is associated with companies that are making

good decisions. The more a director is exposed to these kinds of activities, the better he or she should be able to use that information in the focal firm.

Social Club Membership

Membership in prominent social clubs may also be a useful indicator of social capital. Literature on corporate elites argues that the most prominent corporate directors form an elite group in society that has a tremendous amount of power and influence (Zeitlin, 1974). Social clubs are a place where rich and prominent individuals meet and interact, and memberships in these prominent social clubs are difficult to acquire because part of the goal and allure of these clubs is their exclusivity. Members of the corporate elite meet and get to know one another through their memberships in these exclusive clubs and thereby improve their status and prestige (Domhoff, 1970, 1983; Palmer & Barber, 2001). Obtaining an education at an elite university may be useful, but members of the corporate elite who belong to numerous social clubs are the most prominent and powerful members of the business community (Palmer & Barber, 2001; Zeitlin, Ewen, & Ratcliff, 1974). In fact, it has been proposed that members of social clubs may be the "inner group" of the corporate class (Useem, 1979, 1982; Zeitlin et al., 1974).

Having prestigious directors who are members of these clubs should be useful to the firm. As I heard from one director:

> Social connections are very important. Companies have to manage more than just their business. Companies have to manage public relation and politics as well. A business is a part of the larger environment. It is important that companies have a presence with different aspects of the community.

Social club membership has been used in the past as an indicator of the status aspect of social capital (Belliveau et al., 1996). Having prestigious directors may help the firm gain access to financial resources in times of trouble (Domhoff, 1983; Uzzi, 1999). In addition, high-status directors may be able to directly or indirectly influence legislation that affects the firm (Domhoff, 1983; Useem, 1982). Social club membership may also be an additional place where information can diffuse through the social network. Firms filled with high status directors may also benefit from having increased legitimacy attached to their strategic decisions.

Therefore I propose the following hypotheses:

General Hypothesis 3: The greater the level of social capital on a company's board, the higher the firm's subsequent performance.

H3a: The greater the total number of board ties of a company's board, the higher the firm's subsequent performance.

H3b: The greater the average performance of companies with whom the directors share interlocks, the higher the firm's subsequent performance.

H3c: The greater the number of social club memberships of a company's board, the higher the firm's subsequent performance.

INTERACTION BETWEEN HUMAN AND SOCIAL CAPITAL AND INCENTIVES

Not only should human capital and social capital have a main effect on firm performance, but they should also magnify the effect of director incentives. Aligning the incentives of directors should have little impact on firm performance if the directors are

unskilled or unable to perform their duties effectively. In fact, research suggests that it is the combination of motivation and ability that leads to performance (Mitchell, 1997; Van Eerde & Thierry, 1996). As a board's level of human and social capital rise, so does the value of providing proper incentives. Having directors who care about and are interested in the well-being of the firm will be most useful, when those directors are skilled and have access to valuable information. Castanias and Helfat (1991) argued that managers with high levels of skill will withhold effort if they do not receive pay premiums. This directly implies an interaction between human capital and incentives. Without adequate compensation, directors may do the same. In addition, Zald (1969) argued that incentives would influence a board's motivation to use their personal characteristics and resources for the firm's benefit. This implies that human and social capital will amplify the value of having directors interests aligned with shareholders (Hillman & Dalziel, 2003). Therefore I propose the following hypotheses:

Hypothesis 4a: Human capital will strengthen the effect of incentives on firm performance.

Hypothesis 4b: Social capital will strengthen the effect of incentives on firm performance.

INFORMATION DEMANDS ON DIRECTORS

While both human and social capital will enhance a director's ability to fulfill his or her duties, we must also consider factors that will detract from that ability. One such factor is the information demand (Galbraith, 1974) placed on directors by their responsibilities outside the focal firm. A well established body of literature deals with the

cognitive limitations of individuals (Cyert & March, 1963; Dearborn & Simon, 1958; Schwenk, 1984; Tetlock, 2000). The rather axiomatic conclusion that follows from these works is that individuals are bounded in their ability to handle and process information (Cyert & March, 1963); consequently, people make decision errors (Schwenk, 1984; Staw, Sandelands, & Dutton, 1981). If the ability to process large volumes of information varies (Dollinger, 1984; Henderson & Fredrickson, 1996), then it is important to think about whether information processing demands outside the focal firm will influence directors' ability to monitor and provide advice within the focal firm.

Why might information processing demands affect directors' ability to act effectively and make good strategic decisions? Organizations are complex and are surrounded by multiple stimuli (Ocasio, 1995) that must be attended to in order to achieve success. Strategic decision making places high information processing demands on individuals (Corner, Kinicki, & Keats, 1994). Most directors are either executives or directors of other large companies. As the number and complexity of organizations that a director is a part of and responsible for increases, so does the demand on that director's ability to process information. Because directors have a limited ability to process information, the more information they must attend to outside the firm, the less information they will be able to attend to within the firm. When directors are overwhelmed with information demands, they will not be able to productively monitor executive action or contribute meaningfully to strategic decision making. A quote by Carpenter and Westphal illustrates this point nicely:

> …(I)t has been repeatedly suggested that outside directors are often inadequately prepared to participate in board discussions because their time and attention are

> divided and diluted by their other board appointments; serving on boards at multiple companies makes it difficult for them to gain an adequate understanding of the issues facing any one firm (2001).

It is also important to consider the factors that might contribute to increased external information processing demands on directors. One issue that might affect the level of information processing is simply the number of directorships held. More directorships might hamper a director's ability to focus on the focal firm. This idea that directors that are just too busy might not be as effective is widely held by directors. Consider the following quotes:

> If (directors) are already on 7 or 8 other boards, it is unlikely that they will have the time necessary to be effective. In addition, if (directors) are the CEO of a large company and they sit on 3 or 4 boards that is also likely a problem.
>
> … (D)irectors just don't have the time necessary to do a good job if they have too many board appointments.

However, the empirical support for this idea is mixed and is based on studies that use a simple count of the number of directorships (Ferris, Jagannathan, & Pritchard, 2003; Perry & Peyer, 2002). One possible reason for these mixed results is that all directorships are not equal in the level of information processing required. Firms have different levels of information complexity (Henderson & Fredrickson, 1996). Therefore, rather than simply considering the number of firms a director is associated with, I will instead focus on the complexity of those firms.

Firm size and level of diversification should both contribute to the complexity of a firm and its subsequent information-processing demands (Henderson & Fredrickson, 1996). As a firm increases in size, so does the scope and variety of the firm's customers and suppliers. This will result in a need for more strategic initiatives. Also larger firms

are likely to have a larger range and heterogeneity of factors that need to be considered when making strategic decisions. This requires not only more information processing by management, but also a wider range of information to be processed.

As a firm becomes involved in more businesses, the information load placed on executives and directors should increase (Chandler, 1962; Henderson & Fredrickson, 1996). Regardless of the level of investment into any particular business, the more businesses a firm is involved in, the broader the range and complexity of information that must be dealt with in order to make strategic decisions (Thompson, 1967). The number of businesses is important separate from whether or not they are related or unrelated (Henderson & Fredrickson, 1996). For related diversifiers, increases in the number of business still adds to the information-processing load because of the need to understand and manage interdependencies (Hill & Hoskisson, 1987; Jones & Hill, 1988). In unrelated diversifiers, increases in the number of business adds to the information load because of the need to maintain efficient internal capital markets (Henderson & Fredrickson, 1996; Jones & Hill, 1988). In addition, in recent years relatively few diversified companies treat their portfolio of businesses as an internal capital market. Top management is now typically expected to engage in some non-financial control of divisions in their portfolio, whether related or not. Consequently, the number of unique businesses should directly relate to the overall information processing load of a top manager. Therefore, the larger and more diverse the other firms a director is associated with, the less capacity a director will have for his or her duties in the focal firm. This leads to the following hypotheses:

Hypothesis 5: The greater the level of information-processing demanded of a company's board, the lower the firm's subsequent performance.

H5a: The greater the average size of directors' home companies, the lower the firm's subsequent performance.

H5b: The greater the average number of businesses that director's home companies participate in, the lower the firm's subsequent performance.

H5c: The greater the average size of firms of director's board appointments, the lower the focal firm's subsequent performance.

H5d: The greater the average number of businesses that director's board appointments participate in, the lower the firm's subsequent performance.

INTERACTION BETWEEN HUMAN AND SOCIAL CAPITAL AND INFORMATION PROCESSING DEMANDS

As with the other pieces of the model, it is important to consider how human and social capital will interact with information processing demands. While I expect information processing demands to have a negative main effect on firm performance as argued above, I also expect that effect to be attenuated by the level of human and social capital of the board. Human and social capital will be most necessary when information demands are high. Some of the benefits of human capital described above are related to having more efficient knowledge structures and a greater ability to effectively make decisions. This clearly implies that human capital will be most valuable, when there are also high information-processing requirements. A greater ability to sort through and process complex information will be most valuable when information demands are high.

Expert directors should be better able to know which information is relevant, and which information they can discard. In addition, social capital will be most valuable under conditions of high information demands. One of the benefits of social networks is access to information that helps reduce individual's direct information processing load. Network ties help individuals know which information is timely and relevant (Beckman & Haunschild, 2002; Burt, 2000; Uzzi, 1999). This information is especially relevant under conditions of complexity. Therefore, I would expect human and social capital to be most useful when information-processing demands are high. This leads to the following hypotheses:

Hypothesis 6a: Human capital will positively moderate the negative relationship between information processing demands and firm performance.

Hypothesis 6b: Social capital will positively moderate the negative relationship between information processing demands and firm performance.

Research Methodology

PRELIMINARY INTERVIEWS

During the development of this study, I conducted preliminary interviews with seven board members and also with one institutional investor. The purpose of these interviews was to inform the theoretical ideas of this study and to see whether these ideas were present in the minds and thoughts of practicing directors. These discussions helped provide valuable insight while I was shaping my hypotheses. I conducted the interviews in a semi-structured format. I asked the individuals questions regarding their thoughts

regarding director effectiveness and current trends and developments in the corporate governance landscape. The directors were told that I was studying board effectiveness, and that I was looking for insight from practicing directors. After each interview I transcribed my written notes. I have used quotes from these interviews throughout the text to provide illustration and richness to the theoretical discussion.

SAMPLE AND DATA COLLECTION

The theory generated in this dissertation is interested in the board of directors of large public companies, and the issues arising in the effective governance of those companies. Therefore, in order to test these hypotheses I will study large public companies. I have chosen to study large firms for several reasons. First, most of the theorizing and empirical research regarding boards of directors has been conducted on large. By conducting this study using a similar sample, I enhance the comparability of my findings with those of prior research. In this study I argue that some of the reason for the weak results of prior studies of board independence is due to the failure to include director capabilities into the model. Therefore it was important to test my hypotheses in a setting similar to prior studies of board independence. Second, archival data on director characteristics is only available on mid-to large sized firms. Consequently, the conclusions of this study are only applicable to large firms. I use "intertypical" sampling in this study, by selecting firms across multiple industries rather than examining a group of firms within a single industry (Kimberly, 1976). Intertypical sampling allows my results to be more generalizable across different firms and industries. This study uses archival data on firms in the Fortune 1000. The Fortune 1000 is a yearly list of the largest

1000 firms in the US economy. I selected a random sample of 650 of the firms that were members of the Fortune 1000.

In order to test the hypotheses presented in this study, I collected archival data on each firm selected above over four years. My independent variables were measured from 2001-2004 and my dependent variables were measured from 2002-2005[2].

The archival data for this study was collected from a number of sources. Data on firm sales and performance was collected from COMPUSTAT. Data on firm diversification was collected from the COMPUSTAT segment database. Information on compensation both as executives and directors was collected from the COMPUSTAT EXECUCOMP database, from firm proxy statements, and from the Corporate Library. Information on director attributes was collected from the Corporate Library, the *Who's Who Directory of Corporate America*, Standard and Poor's *Register of Corporations, Directors and Executives*, and company proxy statements. Information on firm's foreign locations was collected from the *Directory of Corporate Affiliations*.

MEASUREMENT OF VARIABLES

Dependent Variables

The dependent variable of this study is *firm performance*. I plan to measure firm performance in two ways. The first measure is *return on equity* (ROE) which is an accounting measure of performance. Return on equity reflects both the operating efficiency of the firm as well as the financing choices of the firm. Therefore, in many

[2] Note: the performance data is not yet available for 2005, Compustat and WRDS usually update their performance data in June or July every year to include data from the prior year. As soon as the 2005 data is

cases ROE may present a biased measure of overall firm performance because two firms with equal operating performance would have different ROEs based on their level of debt. However, when measuring the performance of the firm as affected by the board, it is important to understand that the board is concerned with total firm performance, and so a performance measure that incorporates both operating efficiency and financing is appropriate. There are other accounting measures of performance such as return on assets (ROA). I ran models using ROA as the dependent variable as well as a number of different accounting based measures with similar results. The second measure is *market-to-book value of equity* which is a market-based measure of performance. Market-to-book value measures how effectively a firm is creating value for shareholders by comparing the market value of the firm with the cost of capital that has been contributed by shareholders (Westphal, 1999). I also ran models using total stock returns as an alternative market-based measure of performance and had similar results. As mentioned earlier, I plan to measure performance one year after all independent variables are measured[3].

Independent Variables

Incentive Measures:

Director compensation plans usually include a fixed yearly retainer and smaller additional fees for things such as meeting attendance. However, since the late 1980s firms have usually paid the annual retainer partly in equity using either direct stock grants

---

available I will gather it and re-run my analyses to include the extra year. Consequently, the models presented here test the data on a 3-year panel.)

or stock options (Yermack, 2003). However, company disclosures about the nature of the stock and stock option grants to directors are usually much briefer than similar discussions about executive pay plans (Yermack, 2003). What this means is that I had to estimate some of the terms of the stock awards, such as the date, vesting restrictions, etc. In all cases I followed the procedure outlined by Yermack (2003). I also coded a dummy variable to indicate cases where I had to make an estimation. I subsequently included this dummy variable in all of the models to control for any bias introduced due to any estimation of data.

Average total director compensation was measured as the total annual compensation package of a director including annual retainer, meeting fees, and stock option grants.

Percentage of contingent compensation was measured as the proportion of total director compensation granted in long-term or contingent forms such as stock options (Zajac & Westphal, 1994). This measure was then averaged across all of the directors on the board. For stock options, I used the Black-Scholes method of valuation (Zajac & Westphal, 1994). The Black-Scholes method is the most widely used, and prior research has shown that it is highly correlated with the SEC valuation method and usually gives similar results when used in analysis (Sanders, 2001).

Level of firm ownership by directors was measured as the percentage of company stock owned by the directors of the firm (Sanders & Boivie, 2004). This measure was then divided by the number of total directors on the board to get the average level of

[3] Because I currently have only 3 years of data, running longer lags would result in losing a large portion of the sample size. However, once the data for 2005 is available, I will also re-run my analyses using two-year

ownership by each outside director. This also controls for those directors who are also blockholders of the firm.

Human and Social Capital Measures

I measured five indicators of human capital and three indicators of social capital. All of the measures chosen have been used in prior research and seem to be a good conceptual match between the general constructs of human and social capital, and the specific requirements of a corporate director. While there may be other useful indicators of human and social capital, the measures used in this study are an attempt at using as many measures that were appropriate and available. The measures of human capital are *education level, total top management experience*, *average performance of director's home company*, *firm tenure*, and *strategic relatedness of director's board appointments*. For education level, total top management experience, and firm tenure, the measures of human capital were calculated for each board member and then summed to come up with a total level on the board. Conceptually, human and social capital are similar to other types of capital in that the overall level is important, so using sums is appropriate. However, as a robustness check, I did run models where I used the averages and my results were unchanged. Obviously, because the composite scores contain sums, the size of the board could over-inflate the levels of human and social capital, but in all of my models I control for board size. For the other measures of human capital, the score will be calculated for each board member and then averaged to come up with an average level on the board. For these measures, it is unclear what a sum of performance or relatedness would mean, so using an average is better.

---

lags, and a distributed lag analysis for robustness.

Education level was measured as the number of years of schooling with the lowest value of 12 representing a high school education (Kosnik, 1987; Wiersema & Bantel, 1992). *Total management experience* was measured by examining the number of years each individual has served as a top executive (Carpenter & Westphal, 2001). *Performance of directors' home companies* was calculated by using the industry-indexed return on equity of the company where the director is also an executive for the prior year in the models where ROE was the dependent variable. In models where market to book value is the dependent variable I used the industry-indexed market to book value of the director's home company. Non-executive outside directors were excluded from this measure. *Firm tenure* is the number of years the individual has served as a director at the focal firm. Following Carpenter and Westphal (2001) I measure the *relatedness of board members' other appointments* along four dimensions: product market, foreign market, diversification, and degree of internationalization.

When determining whether a director is associated with firms that are strategically related to the focal firm it is important to look upon strategic dimensions that are widely held as being important. Product market similarity was measured by examining the number of board appointments that share the same primary SIC code as the focal firm and then dividing that by the total number of board appointments.

Foreign market similarity was measured by counting the number of appointments the director has to firms that share a primary foreign market, and then normalizing this by the total number of appointments. For example, if a director served on the board of two firms that report their primary foreign market as the UK then that director's appointments would show a high degree of similarity.

To examine the extent to which the director's board appointments are similar in their diversification profile, I used an entropy-based diversification index (Palepu, 1985). The diversification score is calculated as $\Sigma P_i \ln (1 / P_i)$, where P_i equals the percentage of sales a firm received from its i^{th} 6-digit NAICS segment. I then calculated the absolute difference between the diversification score of the focal firm and the diversification score of each of the firms with which the director is affiliated. I then added the scores and normalize them by the number of total appointments. It is important to average these scores in order to avoid inflating the overall similarity of a director with many board appointments that are somewhat similar. For instance, if a director had affiliations with 10 other firms that were each similar by 0.1 this would appear equally similar to a director that has affiliations with 2 other firms that are each similar by 0.5. By averaging these scores the true level of similarity in director appointments is represented more accurately. This value was then subtracted from the highest value of diversification dissimilarity in order to create an index of relatedness. While there is not universal agreement (Allison, 1990), I must note that some researchers have argued that using difference scores is problematic (Cronbach & Furby, 1970; Edwards, 1994). Therefore, in order to be thorough each time a difference score is used I ran additional analyses to make sure the difference scores used satisfied the constraints outlined by Edwards (1994). I followed the procedure outlined by Edwards (1994) and subsequently used in other research (Milton & Westphal, 2005) and each of the measures used satisfied all four constraints specified by Edwards. I also ran analyses where I used the constrained and unconstrained equations and my results were unchanged, which indicates that using a difference score was appropriate for this analysis.

To measure the extent to which directors serve on boards that have similar degrees of internationalization, I used a modified version of Sullivan's (1994) composite measure of the degree of internationalization (DOI) (Carpenter & Westphal, 2001). The DOI measure examines separate but distinct areas of internationalization. The DOI measure usually has three components, but because of issues regarding data availability I was only able to use two of the three components. The first characteristic it examines is foreign sales. The level of foreign sales is calculated as the ratio of foreign sales to total sales. This characteristic reflects how much a firm depends on sales to foreign markets. The other measure is geographic dispersion, and this is measured by examining the number of country subsidiaries as a percentage of the total number of country subsidiaries represented in the sample. Each of these characteristics can range from 0 to 1, and the DOI is calculated by summing the measures. Prior research has shown that these measures have high inter-item reliability and load on one factor (Carpenter & Westphal, 2001; Sullivan, 1994) except when the firms studied are extremely young (Carpenter, Pollock, & Leary, 2003). However, although the firms in this sample are large and well-established, I tested the reliability of this index in my own sample and also ran factor loadings to make sure that this measure demonstrates a reliable single-factor loading. The reliability coefficient was 0.81 which is acceptable, and there was a clear single factor loading for both areas of internationalization with each item loading equally at 0.77. I calculated the relatedness of this measure by subtracting the absolute difference between the focal firm and the other firm's with which a director is affiliated and then averaging this score. This value was then subtracted from the highest value of DOI dissimilarity in order to create an index of relatedness.

The measures of social capital are *total board ties*, *performance of interlocks*, and *social club memberships*.

Total board ties were measured by examining the total number of other firms that the focal firm is connected to through director interlocks (Davis, 1991; Finkelstein, 1992; Haunschild, 1994). I excluded duplicate connections— so this measure effectively captures the firm's degree centrality in the board interlock network (Gulati et al., 2000). *Performance of interlocks* was measured using the average industry-indexed performance of the firms that the director is tied to. This was then averaged across all directors (Finkelstein, 1992). The performance measure used was matched to the dependent variable, so that when ROE is the dependent variable the performance average is calculated using ROE, and vice-verse when market to book value is the dependent variable. *Social club membership* was measured using the total number of memberships to exclusive social clubs listed in the Social Register (Belliveau et al., 1996; Palmer & Barber, 2001). This measure did not exclude duplicate ties to social clubs, because it is important to understand how prestigious the firm's individual directors are as a group, rather than just the total number of social clubs that the board would have access to.

Each measure of human and social capital was entered into the models individually. However, for all models using interaction terms composite variables were created and used for ease of analysis. If I had used each of the individual indicators for the variables, this would have resulted in 96 separate interaction terms. This many interaction terms would likely cause problems with multicollinearity and would also require an extremely large sample in order to have sufficient power. Human and social capital are stocks of resources that are embedded or tied to individuals, and are composed

of multiple factors. They are not latent variables, like personality or motivation, which are measured by using indirect indicators and then assuming the presence of an unmeasured but real factor. Instead, they are pools of resources available to individuals that can be measured using composite indicators. Therefore, in my analyses when I need to composite the variables I will combine the different indicators using summed z-scores and using the generated total score in the regression equations. For the purpose of this study, summing the data using z-scores is simply a data reduction technique used to aggregate my constructs and to facilitate the analysis of multiple indicators.

I have chosen to use summed z-scores for a couple of reasons. Factor analysis techniques combine indicators by examining the level of shared variance between measures, and then by creating a composite variable using weightings based on that shared variance. However, conceptually human and social capital may be indicated by different measures that are not likely to be correlated, such as education and experience where there is a direct trade off between the two. So, using a factor analytic approach is not appropriate. One potential limitation of using a summed z-score is that it assumes an equal weight for each indicator of human or social capital. While I do not believe that each measure of human and social capital necessarily has an equal impact on an individual's overall level of human and social capital, extant theory does not suggest an alternative weighting scheme a priori. In addition, research has shown that equal weighting of indicators may produce regression results that are very similar to more sophisticated weightings (Lawshe & Schucker, 1959; Schmidt & Kaplan, 1971; Stanley & Wang, 1970). In fact, in some cases simple unit weighting as is done here provides superior estimates than does a regression weighting of composite measures (Schmidt,

1971).

Information Demand Measures:

Average size of home company was measured using the log of sales for directors' home companies. This was then averaged across the board. *Average number of businesses of home company* was measured by counting the number of unique SIC codes in which a business participated. When studying the primary effects of diversification, simple counts of SIC codes can be just as valid as more complex measures of diversification (Henderson & Fredrickson, 1996; Lubatkin, Merchant, & Srinivasan, 1993). This also avoids the problem of endogeneity from using the entropy diversification index in two different places in the same model. *Average size of other directorships* was measured using the log of sales for the companies with which the directors are affiliated and then it was averaged across the board. *Average number of businesses of other directorships* was measured by counting the number of unique SIC codes in which the directors other board appointments participated. This was then averaged across the board.

Control Variables

A firms' current level of performance may be highly influenced by prior firm performance. In order to control for that effect, I included *prior firm ROE* and *prior firm market-to-book value* in the models using an instrumental variable to control for the problem of autoregression (Haveman, 1993). One of the problems with intertypical sampling is that it can often be difficult to compare firms across industries (Kimberly, 1976). Therefore, I controlled for industry differences. I did this in two different ways.

The first way was to add a unique dummy variable for each unique industry present in the sample. This resulted in over 200 separate dummies. I then added these to the models. However, environmental turbulence has been shown to affect diversity and firm performance (Carpenter & Westphal, 2001). So I also tried running models where instead of using dummies, I included a variable that models the turbulence within the firm's primary industry. This control gave identical results to using all of the industry dummies and so I use this in all of the models due to its much greater simplicity.

Theory has shown that *firm size* may affect firm performance (Kimberly, 1976). Firm size may also affect the board's ability to influence firm outcomes. Because firm sales are usually highly skewed, firm size was measured using the log of sales. Logging this variable should allow it to more accurately reflect the assumptions of normality present within regression models. *Proportion of outsiders on board* was measured as a ratio of outside to inside directors. Directors are classified as being outside if they are not employed by the firm. Having a high proportion of outsiders on the board is one of the most commonly used measures of board independence (Dalton et al., 1998; Kosnik, 1987).

Blockholder ownership was measured as the percentage of company stock owned by parties with at least a five percent stake in the company, who are not officers or directors and who have no business ties to the firm (Bethel & Liebeskind, 1993). Blockholder ownership is seen as another monitoring mechanism that may influence firm performance (Sanders & Boivie, 2004).

I measured *institutional ownership* as the total percentage of company stock owned by institutional investors like pension or mutual funds (Bethel & Liebeskind,

1993). The size of the board may affect how well the group functions (Ancona & Caldwell, 1992). *Board size* is simply the total number of directors on the focal firm's board of directors. *CEO contingent compensation* may affect the level of monitoring necessary by the board (Westphal, 1999). Therefore I controlled for the level of a CEO's pay that is paid in long-term forms. This was measured similar to the above description of how board contingent compensation was measured.

The power of the board is important when determining its effectiveness at influencing firm performance. Therefore, I have attempted to control for a couple of aspects of power. *Appointments after the CEO* can affect the power of directors and their ability to contribute to board meetings (Westphal & Zajac, 1995). Therefore, I controlled for the number of directors that were appointed after the current CEO took office. The CEO often has a great informational advantage over the outside members of the board and so it is important to control for his power. *Leadership structure* can also affect the distribution of power between the CEO and the board (Westphal & Zajac, 1995) therefore, I controlled for whether the CEO was also the chairman of the board. This was coded as a dummy variable, where a one indicates the positions are held by the same individual. The diversity of the board may affect the functioning of the team (Hambrick et al., 1996; Knight et al., 1999; Pelled, Eisenhardt, & Xin, 1999). To control for this I calculated heterogeneity measures based on the *diversity of director's education level* and *ages*.

Estimation Methods

ANALYSIS

In this study both my dependent and independent variables are continuous in nature and are measured over time. This results in a cross-sectional panel data set. Cross-sectional panel data can be tested using pooled time-series analyses. These analyses allow use of the full sample, and reflect the average effect of the independent variables over the full study, thereby giving more accurate estimates than cross-sectional sub-samples.

Because the data set contains pooled observations, there is a lack of independence among observations which violates the assumptions of OLS and subsequently OLS will produce biased estimates. I therefore used generalized least squares (GLS). GLS is designed for analyzing longitudinal data that is continuous in nature and is especially good at handling the problem of autocorrelation that occurs with longitudinal models. GLS corrects for autocorrelation across panels by generating an autocorrelation coefficient. In addition, I was able to run panel-specific autocorrelation coefficients. These models generate a separate auto-correlation coefficient for each panel (firm) in the data set. The end result is a model that controls for firm-specific correlation across time and does a better job of controlling for autocorrelation than a simple pooled autocorrelation coefficient. All models reported use the panel-specific autocorrelation. Although, for robustness, I also ran models using the pooled autocorrelation coefficient and I get substantively similar results. One limitation of GLS is that it does not allow me to run random or fixed effects models. However, for this study, random effects models are not appropriate because they assume that the subject effects are completely

uncorrelated with the predictors, which is unlikely here. In order to simulate fixed effects models, I ran models where I mean-deviated each variable in the regression equation. This procedure simulates fixed-effects models. The results were not substantively different, so I report the simpler models.

Results

Table 1 provides descriptive statistics for the variables in this study. Some of the predictors are significantly correlated, so to ensure that multicollinearity was not a problem I assessed my models using matrix decomposition techniques, as recommended by Judge et al. (1988: 870). In all of the models the highest condition index was 14, well under the highly conservative upper limit of 20 recommended by Belsley (1991), which strongly indicates that collinearity did not affect the hypothesis tests.

HYPOTHESIS TESTS

Tables 2 and 3 list the results for the GLS analyses. Table 2 shows the models using ROE as the dependent variable, while Table 3 shows the models using market to book value as the dependent variable. For each DV Model 1 contains the control variables, Model 2 adds the hypothesized main effects individually, Model 3 replaces the individual main effects with composite variables, and Model 4 adds the hypothesized interactions. For the results of each set of hypotheses I will first examine about the return on equity models, and then the market to book models.

ROE Models

Hypothesis 1a predicted that the greater the average level of total compensation provided to a company's board, the higher the firm's subsequent performance. As Model 2 shows, this hypothesis was not supported. The coefficient was not in the direction predicted and was not significant. Hypothesis 1b predicted that the greater the average level of contingent compensation provided to a company's board, the higher the firm's subsequent performance. This hypothesis was also not supported. The coefficient was positive but not significant. Hypothesis 1c predicted that the greater the level of firm ownership among directors, the higher the firm's subsequent performance. As Model 2 shows, this hypothesis received partial support. The coefficient of 2.939 was positive but only marginally significant ($p<.10$). General Hypothesis 1 predicted that the greater the level of incentives provided to a company's board, the higher the firm's subsequent performance. As Model 3 shows this hypothesis was not supported. The coefficient was actually negative and only marginally significant ($p<.10$).

Hypothesis 2a predicted that the greater the level of education on a company's board, the higher the firm's subsequent performance. As Model 2 shows this was not supported. The coefficient was positive, but not significant. Hypothesis 2b predicted that the greater the level of total management experience on a company's board, the higher the firm's subsequent performance. Model 2 shows this hypothesis was supported. The coefficient of 0.002 was positive and significant ($p<.05$). Hypothesis 2c predicted that the greater the average performance of directors' home companies, the higher the firm's subsequent performance. Model 2 shows that this hypothesis was supported. The coefficient of 0.053 was positive and significant ($p<.001$).

Hypothesis 2d predicted that the greater the average firm tenure of a company's board, the higher the firm's subsequent performance. As Model 2 shows, this hypothesis was not supported. The coefficient was positive but not significant. Hypothesis 2e predicted that the greater the strategic relatedness of directors' home companies, the higher the firm's subsequent performance. As Model 2 shows, this hypothesis received partial support. Strategic relatedness was measured using four different measures and only one of the measures (the similarity of directors other boards on the primary foreign market) had a coefficient that was positive (0.581) and significant ($p<.01$). General Hypothesis 2 predicted that the greater the level of human capital on a company's board, the higher the firm's subsequent performance. As Model 3 shows, this hypothesis was supported. The coefficient of 0.129 was positive and significant ($p<.001$).

Hypothesis 3a predicted that the greater the total number of board ties of a company's board, the higher the firm's subsequent performance. As Model 2 shows, this hypothesis was not supported. The coefficient while significant was negative. Hypothesis 3b predicted that the greater the average performance of companies with whom the directors share interlocks, the higher the firm's subsequent performance. This hypothesis was also not supported. The coefficient was negative and not significant. Hypothesis 3c predicted that the greater the number of social club memberships of a company's board, the higher the firm's subsequent performance. As Model 2 shows, this hypothesis received only marginal support. The coefficient of 0.013 was positive buy only marginally significant ($p<.10$). General Hypothesis 3 predicted that the greater the level of social capital on a company's board, the higher the firm's subsequent performance. As

Model 3 shows, this hypothesis was not supported. The coefficient was actually negative and significant.

Hypothesis 4a predicted that human capital would strengthen the effect of incentives on firm performance. While the interaction is significant, the hypothesis is not really supported. Because this is an interactive effect it is only appropriate to interpret the effects of human capital and incentives jointly. In Model 4, the coefficient of director incentives was negative and significant ($p<.01$) and the coefficient of human capital was positive and significant ($p<.001$), and the interaction coefficient of -0.017 was negative and significant ($p<.001$). Figure 2 uses the coefficients from Model 4 to graph the interactive effect sizes of director incentives and human capital on ROE. The *y* axis on Figure 2 indicates the change in the firm's ROE based on changes in the predictor variables. For changes in director incentives, fewer incentives is equal to $\mu - \sigma$, where μ and σ are the mean and standard deviation of director incentives; more incentives is equal to $\mu + \sigma$. For changes in human capital, low human capital is equal to $\mu - \sigma$, where μ and σ are the mean and standard deviation of human capital; high human capital is equal to $\mu + \sigma$. I tested and found that the differences between the points on the graph (low and high levels of incentives) and the slopes of the lines (high and low human capital) are significant ($p<0.001$). What this graph shows is that at any level of incentives, having higher human capital leads to better firm performance. However, the effect of high levels of human capital on ROE actually decreases when incentives to the directors move to higher levels (measured as 1 sd above the mean). In addition, the graph also shows that moving from low to high incentives significantly changes the effect of low human capital

on the performance of the firm. Boards with low levels of human capital actually perform significantly better at higher levels of incentives.

Hypothesis 4b predicted that social capital would strengthen the effect of incentives on firm performance. This hypothesis was not supported. Again, I will interpret the effects of social capital and incentives jointly. In Model 4, the coefficient of director incentives was negative and significant ($p<.01$) and the coefficient of social capital was negative and significant ($p<.05$), and the interaction coefficient of 0.023 was positive and significant ($p<.001$). Figure 3 uses the coefficients from Model 4 to graph the interactive effect sizes of director incentives and social capital on ROE. The *y* axis on Figure 3 indicates the change in the firm's ROE based on changes in the predictor variables. The other variables are graphed in a manner similar to that described above. I tested and found that the difference between high and low levels of social capital at low levels of incentives was negative and significant ($p<0.001$), but the difference between high and low levels of social capital at high levels of incentives was not significant. In addition, I tested and found that the slope of the high social capital line was not significant, but the slope of the low social capital line was significant ($p<.001$). What this graph shows is that the effect of social capital on ROE disappears when incentives to the directors move from low (measured as 1 sd below the mean) to high levels (measured as 1 sd above the mean). At low levels, having low levels of social capital improves the firm's ROE. However, when the firm has higher incentives social capital has no effect.

Hypothesis 5a predicted that the greater the average size of director's home companies, the lower the firm's subsequent performance. As Model 2 shows, this hypothesis was not supported. Although the coefficient is significant, it is in the opposite

direction than predicted. Hypothesis 5b predicted that the greater the average number of businesses that director's home companies participate in, the lower the firm's subsequent performance. As Model 2 shows, this hypothesis was supported. The coefficient of -0.074 was negative and significant ($p<.05$). Hypothesis 5c predicted that the greater the average size of firms of director's board appointments, the lower the focal firm's subsequent performance. As Model 2 shows, this hypothesis was not supported. The coefficient was positive and not significant. Hypothesis 5d predicted that the greater the average number of businesses that director's board appointments participate in, the lower the firm's subsequent performance. Model 2 shows that this hypothesis was supported. The coefficient of -0.103 was negative and significant. General Hypothesis 5 predicted that the greater the level of information-processing demanded of a company's board, the lower the firm's subsequent performance. As Model 3 shows, this hypothesis was supported. The coefficient of -0.018 was negative and significant.

Hypothesis 6a predicted that human capital would positively moderate the negative relationship between information processing demands and firm performance. Again, although the interaction is significant in the direction predicted, the results are slightly different than the formal prediction. As with the results for Hypothesis 4 I will interpret the effects of human capital and information demands jointly. In Model 4, the coefficient of information demands was negative and significant ($p<.01$) and the coefficient of human capital was positive and significant ($p<.001$), and the interaction coefficient of -0.017 was negative and significant ($p<.001$). Figure 4 uses the coefficients from Model 4 to graph the interactive effect sizes of information demands and human capital on ROE. The *y* axis on Figure 4 indicates the change in the firm's ROE based on

changes in the predictor variables. For changes in information demands, low information demand is equal to $\mu - \sigma$, where μ and σ are the mean and standard deviation of information demands; high information demand is equal to $\mu + \sigma$. For changes in human capital, low human capital is equal to $\mu - \sigma$, where μ and σ are the mean and standard deviation of human capital; high human capital is equal to $\mu + \sigma$. I tested and found that the difference between high and low levels of human capital was statistically significant ($p<0.001$) at both high and low levels of incentives. However, while the slope of the high human capital line was significant ($p<.001$), the slope of the low human capital line was not significant. What this graph shows is that high levels of human capital are always beneficial to the firm. However, the positive effect of human capital on ROE decreases when information demands are at high levels (measured as 1 sd above the mean). As information demands rise directors with high levels of human capital have less of a positive effect on firm performance.

Hypothesis 6b predicted that social capital would positively moderate the negative relationship between information processing demands and firm performance. This hypothesis was not supported. Again, I will interpret the effects of social capital and information demands jointly. In Model 4, the coefficient of information demands was negative and significant ($p<.01$) and the coefficient of social capital was negative and significant ($p<.05$), and the interaction coefficient of 0.012 was positive and significant ($p<.001$). Figure 5 uses the coefficients from Model 4 to graph the interactive effect sizes of information demands and social capital on ROE. The *y* axis on Figure 5 indicates the change in the firm's ROE based on changes in the predictor variables. The other variables

are graphed in a manner similar to that described above. I tested and found that the difference between low and high levels of social capital at low levels of information demands was significant ($p<0.001$), but the difference between high and low levels of social capital was not significant at high levels of information demand. What this graph shows is that the positive effect of low social capital on ROE disappears when information demands go from lower to higher levels. At low information demands, having low levels of social capital improves the firm's ROE, however when information demands rise social capital loses its effect on firm performance.

Market to Book Value Models

Hypothesis 1a predicted that the greater the average level of total compensation provided to a company's board, the higher the firm's subsequent performance. As Model 2 shows, this hypothesis was supported. The coefficient of 3.895 was positive and significant ($p<.001$). Hypothesis 1b predicted that the greater the average level of contingent compensation provided to a company's board, the higher the firm's subsequent performance. This hypothesis was not supported. The coefficient was negative but not significant. Hypothesis 1c predicted that the greater the level of firm ownership among directors, the higher the firm's subsequent performance. As Model 2 shows, this hypothesis was not supported. The coefficient was actually negative but only marginally significant ($p<.10$). General Hypothesis 1 predicted that the greater the level of incentives provided to a company's board, the higher the firm's subsequent performance. As Model 3 shows this hypothesis was supported. The coefficient of 1.493 was positive and significant ($p<.05$).

Hypothesis 2a predicted that the greater the level of education on a company's board, the higher the firm's subsequent performance. As Model 2 shows this was not supported. The coefficient was positive, but not significant. Hypothesis 2b predicted that the greater the level of total management experience on a company's board, the higher the firm's subsequent performance. Model 2 shows this hypothesis was also not supported. The coefficient was negative and not significant. Hypothesis 2c predicted that the greater the average performance of directors' home companies, the higher the firm's subsequent performance. Model 2 shows that this hypothesis was not supported. The coefficient was negative and not significant. Hypothesis 2d predicted that the greater the average firm tenure of a company's board, the higher the firm's subsequent performance. As Model 2 shows, this hypothesis was not significant. The coefficient was positive but not significant. Hypothesis 2e predicted that the greater the strategic relatedness of directors' home companies, the higher the firm's subsequent performance. As Model 2 shows, this hypothesis was not supported. Strategic relatedness was measured using four different measures and only one of the measures (the similarity of directors other boards on the primary foreign market) had a coefficient that was significant, but it was in the opposite direction than predicted. General Hypothesis 2 predicted that the greater the level of human capital on a company's board, the higher the firm's subsequent performance. As Model 3 shows, this hypothesis was not supported. The coefficient was negative and only marginally significant ($p<.10$).

Hypothesis 3a predicted that the greater the total number of board ties of a company's board, the higher the firm's subsequent performance. As Model 2 shows, this hypothesis was not supported. The coefficient while significant was negative. Hypothesis

3b predicted that the greater the average performance of companies with whom the directors share interlocks, the higher the firm's subsequent performance. This hypothesis was also not supported. The coefficient was positive and not significant. Hypothesis 3c predicted that the greater the number of social club memberships of a company's board, the higher the firm's subsequent performance. As Model 2 shows, this hypothesis was not supported. The coefficient was negative and not significant. General Hypothesis 3 predicted that the greater the level of social capital on a company's board, the higher the firm's subsequent performance. As Model 3 shows, this hypothesis was not supported. The coefficient was negative and not significant.

Hypothesis 4a predicted that human capital would strengthen the effect of incentives on firm performance. This hypothesis was not supported. Because this is an interactive effect it is only appropriate to interpret the effects of human capital and incentives jointly. In Model 4, the coefficient of director incentives was positive but not and significant and the coefficient of human capital was negative and significant ($p<.05$), and the interaction coefficient of -0.460 was negative and significant ($p<.05$). Figure 6 uses the coefficients from Model 4 to graph the interactive effect sizes of director incentives and human capital on market to book value. The *y* axis on Figure 6 indicates the change in the firm's market to book value based on changes in the predictor variables. For changes in director incentives, fewer incentives is equal to $\mu - \sigma$, where μ and σ are the mean and standard deviation of director incentives; more incentives is equal to $\mu + \sigma$. For changes in human capital, low human capital is equal to $\mu - \sigma$, where μ and σ are the mean and standard deviation of human capital; high human capital is equal to $\mu + \sigma$.

What this graph shows is that the effect of human capital on market to book value becomes significant when incentives to the directors are at high levels (measured as 1 sd above the mean). At low levels of incentives, there is no difference between low and high levels of human capital, but at high levels of incentives, lower human capital is very valuable.

Hypothesis 4b predicted that social capital would strengthen the effect of incentives on firm performance. As Model 4 shows, this hypothesis was not supported. The interactive coefficient is positive but not significant.

Hypothesis 5a predicted that the greater the average size of director's home companies, the lower the firm's subsequent performance. As Model 2 shows, this hypothesis was supported. The coefficient of -2.866 was negative and significant ($p<.05$). Hypothesis 5b predicted that the greater the average number of businesses that director's home companies participate in, the lower the firm's subsequent performance. As Model 2 shows, this hypothesis was not supported. The coefficient of was actually positive and significant ($p<.001$). Hypothesis 5c predicted that the greater the average size of firms of director's board appointments, the lower the focal firm's subsequent performance. As Model 2 shows, this hypothesis received only marginal support. The coefficient was negative but only marginally significant ($p<.10$). Hypothesis 5d predicted that the greater the average number of businesses that director's board appointments participate in, the lower the firm's subsequent performance. Model 2 shows that this hypothesis was not supported. The coefficient of was positive and significant. General Hypothesis 5 predicted that the greater the level of information-processing demanded of a company's

board, the lower the firm's subsequent performance. As Model 3 shows, this hypothesis was not supported. The coefficient of was negative but not significant.

Hypothesis 6a predicted that human capital would positively moderate the negative relationship between information processing demands and firm performance. As Model 4 shows, this hypothesis was not supported. The coefficient was negative but not significant.

Hypothesis 6b predicted that social capital would positively moderate the negative relationship between information processing demands and firm performance. As Model 4 shows, this hypothesis was not supported. Again, I will interpret the effects of social capital and information demands jointly. In Model 4, the coefficient of information demands was positive and not significant and the coefficient of social capital was negative and marginally significant ($p<.10$), and the interaction coefficient of 0.734 was positive and significant ($p<.001$). Figure 7 uses the coefficients from Model 4 to graph the interactive effect sizes of information demands and social capital on market to book value. The *y* axis on Figure 7 indicates the change in the firm's market to book value based on changes in the predictor variables. The other variables are graphed in a manner similar to that described above. What this graph shows is that the effect of social capital on ROE changes when information demands go from lower to higher levels. At low information demands, having low levels of social capital improves the firm ROE, however that relationship flips, when directors have higher information demands high social capital becomes valuable, and low social capital become less useful.

Discussion and Conclusion

The findings of this study extend prior research on corporate governance and boards of directors in three important ways. First, I theorized and found modest support for the idea that the capabilities of directors as measured by their human and social capital can affect firm performance. This extends theory on corporate governance by demonstrating that the assumption of equal capability present in virtually all perspectives on boards is unwarranted. This also sheds some insight into why some studies of board performance that simply examine board structure may have failed to find significant results. Second, I argued and found some evidence that increased information demands on directors outside the focal firm will lower the performance of the focal firm. This extends theory on corporate governance by suggesting that the cognitive limitations of directors must be considered constructing models of board effectiveness. Finally, I found that the negative effect of information demands is so powerful that it may overpower even the most experienced directors and lead to lower firm performance.

CONTRIBUTIONS TO THEORY

This study makes an important contribution to theory and research on corporate governance by developing a model of director effectiveness that incorporates theory on director capabilities. Virtually no prior work on boards of directors has considered how director capabilities may contribute to overall board effectiveness. I found some support for the prediction that firms who have directors with higher levels of human capital perform better. This finding provides at least partial support for my argument that directors are repositories of unique and valuable bundles of skills and experience. This

finding contributes to research on corporate governance by providing partial confirmation to the proposed theory about how director capabilities may influence the ability of the board to monitor and provide advice.

It must be noted that, in general, the results in this study were very weak when market to book value is used as the dependent variable. Market to book value is a market based measure of performance that compares the ratio of the stock market value of the firm with the actual book value of the firm. Firms with higher market to book values are seen by the market as having a greater potential to produce higher returns in the future. It is not surprising that I find weaker results using this as a measure of performance. The theory developed in this study argues that directors with high levels of human and social capital will be better able to monitor and provide advice to the executives of the firm. This high quality advice and monitoring is more likely to be represented in accounting based measures of performance than in market based measures. In general, institutional players in the market use variables such as the outsider ratio as proxies for the effectiveness of the governance of the firm. It is less likely that the market is cognizant of the capabilities of the directors and is incorporating those capabilities into their valuation. Market valuations are based on investor's perceptions of the firm, and because the concept of director capabilities is new, it is less likely to have a signaling effect. Because of the weak effect in the market to book models, in this discussion section I concentrate on the implications of the findings in the return on equity models.

By examining director capabilities, this study implicitly questions one of the core assumptions of all governance research: the notion that all directors are equally capable. This assumption, while unstated, is a part of corporate governance research from a broad

range of perspectives including agency theory, power and resource dependence perspectives. Most of the work to date in this area questions how much directors actually monitor executive behavior (Lorsch & MacIver, 1989; Mace, 1986; Westphal, 1998; Westphal & Zajac, 1995), rather than questioning the ability of directors to do so. By questioning this assumption, the ideas presented here confirm that all boards are not created equal. Although companies may have boards filled with similar percentages of outsiders and insiders, some structurally similar boards will still vary considerably in their ability to both monitor executive action and to provide advice and counsel. Certain findings related to human capital are consistent with this assertion. Firms that had directors with high levels of top management experience, that came from highly performing home firms, and whose other board appointments shared similar foreign markets had higher performance, after controlling for the ratio of outsiders on the board. What this suggests is that current research on agency theory and corporate governance that focuses primarily on the structure of boards of directors does not provide a complete or accurate picture. Understanding differences in the abilities of boards with similar structures should help explain some of the difficulty finding consistent links between board structure and firm performance.

In fact, one of the noteworthy findings of this study is that the effect of the outsider ratio actually changes once the capabilities of the board are added into the model. In Model 1, the outsider ratio was positive and significant. However, when the capabilities of the board are added individually in Model it becomes insignificant. Moreover, when the composite variables are used and when the interactions are added, the outsider ratio actually becomes negative and significant. In today's corporate

governance climate, most boards have a majority of independent directors, but many boards are still not effective. What this finding highlights is that the ratio of outsiders on the board may provide very little information about the quality or effectiveness of the board or may be masking the effect of human capital. In addition, this finding supports some perspectives in the corporate governance literature that suggest that a greater proportion of outsiders may actually have a negative effect. For instance, some studies have argued that a greater proportion of outsiders on the board may be harmful because it reduces the overall level of advice giving on the board (Westphal, 1999). Other studies also suggest that having a greater proportion of outsiders on the board may be problematic in firms in highly turbulent industries because of the large information gap between directors and executives (Sanders & Boivie, 2004).

It is also interesting to note that contrary to the predictions of this study, the effect of social capital on firm performance was generally negative. In fact, based on the graphs of the interactions between social capital and incentives and social capital and information demands, social capital may only have a positive effect at extremely high levels of incentives and/or information demands (more than 1 sd above the mean). It is difficult to understand why boards that have directors with high levels of social capital may perform more poorly, but perhaps we can speculate about some possible reasons. Social capital comes at a cost. For a director to have access to more information, power, or prestige, that individual must have more contacts and more responsibilities. This may limit the time that the director has to spend on director activities at the focal firm. There is some research that indicates that some of the advice-giving provided by outside directors occurs outside board meetings (Westphal, 1999). If this is the case, directors

with high levels of social capital may be more difficult to reach, or more unwilling or unable to spend time outside of board meetings on their board duties. This may also mean that the general effect of social capital is actually more similar to the effect of information demands. In addition, it is possible that directors with high levels of social capital feel that they do not need to expend as much effort regarding their board duties. They may feel isolated from the pressure to work hard and expend effort because of their large number of contacts and positive reputation. Alternatively, because directors with high levels of social capital realize that they contribute to the legitimacy of the firm they may feel less of a need to contribute to its performance.

Another contribution of this study was through incorporating the concept of information demands into thinking on board effectiveness. The findings of this study generally support the notion that greater information demands of directors lowers the performance of the firm. Moreover, it appears that the effect of information demands is strong enough that it actually weakens the impact of having directors with high levels of human capital. High levels of information demands outside the focal firm may overwhelm even the most experienced and skilled directors and render them less able to provide quality monitoring and/or meaningful advice. Another interpretation of this finding is that information demands may affect directors with high human capital more due to the demands at other firms where they serve. So, rather than overwhelming the directors, high information demand board appointments may just require more time and leave them less available to contribute to the focal firm.

Another noteworthy finding of this study is that director compensation did not have a main effect on firm performance, only a contingent effect. Moreover, as Figures 2

and 3 show, the effect of incentives is different than predicted. With regards to human capital, boards filled with high levels of human capital had higher performance under lower levels of compensation. With regards to social capital, at higher levels of compensation social capital had no effect. In fact, higher levels of incentives made the positive effect of low social capital disappear. This may be a side effect of monetary incentives. Perhaps higher compensation of directors replaces their intrinsic motivation with extrinsic motivation and therefore directors do just enough to get their compensation and produce fewer positive citizenship behaviors (Deci, Koestner, & Ryan, 1999). What this also may mean is that that human capital and incentives are substitutes for each other. Incentives may cause directors to devote extra time and effort to their task, which at least partially overcomes their lack of human capital. However, if directors have high levels of human capital, they may not need to expend additional effort and/or devote much extra time outside meetings, so incentives make little difference.

This study also contributes to research on corporate governance through its inclusion of theory from different fields that have generally been ignored when examining board effectiveness. Most prior work on corporate governance examined one or two aspects of board effectiveness in isolation, and used only one theoretical perspective. By drawing upon research from learning, human capital, social capital, information processing, and incentives, this study found a number of consistent links between the characteristics of the board and the performance of the firm. Prior work using human capital has often failed to explore why the proposed human capital measures would truly indicate valuable experience. In this study I drew upon research in learning theory, to more fully explore why experience may contribute to a director's level of

human capital. I have drawn upon theories from human and social capital to suggest a number of factors that may be proxies for director capabilities. In addition, I have used theory on information processing to show that increased demands on director's time and energy may have a negative effect on board effectiveness. This research expands governance researcher's toolkit of available ideas and theories to build a more inclusive model of director effectiveness.

CONTRIBUTIONS AND IMPLICATIONS FOR MANAGEMENT PRACTICE

This model has clear implications for practice. If some directors are more qualified than others, then firms should be selective about whom they recruit to fill vacancies on their boards. Director selection should consider more than just directors' previous experience, but should also consider directors' external information demands. This study shows that firms seeking to fill vacancies on their board may need to expand the ways in which they examine potential board candidates. For instance, firms should first try to assess the level of human capital a director possesses by looking into his/her management experience, prior success, and the relatedness of his/her other board appointments. In addition to the director's human capital, firms would need to examine the information demands placed on directors outside of this directorship. Firms could look at the complexity of director's home companies and also their other board appointments to make sure that they are not overloaded. Finally, these findings here also suggest that the compensation packages of directors may be less important than has been previously thought, or perhaps they need to be redesigned to more fully motivate directors.

This study also demonstrates that shareholders may need to examine boards more closely than just examining the ratio of outsiders to insiders, in order to determine if the board is able to adequately protect their interests. Recently, there has been a large public outcry for increased board independence. However, the model developed here suggests that increased independence may not be enough to truly bring about effective corporate governance reform. In fact, after controlling for human and social capital, increased independence may actually hurt firm performance. What this suggests is that investors and governance reformers need to consider the capabilities as well as the structure of the board.

DIRECTIONS FOR FUTURE RESEARCH

One potentially rich area for future research is to further explore the relationship between human and social capital. While I acknowledge that they may affect each other, in this study I measured both human and social capital at certain points in time and predicted their effects. Future research may want to consider how the levels of human and social capital interact and affect each other over time.

In addition, because this study is an attempt to build an early model that includes director capabilities, I am not examining any potentially moderating effects of the broader external environment. Future research may be able to expand and refine this model by considering how the model may be affected by different environmental conditions. For instance, environmental stability has been shown to affect board functioning (Carpenter & Westphal, 2001). While I control for turbulence in this study, it may also have potential moderating effects.

One area that is a potentially rich area of future research relates to the differences in the level of involvement of outside directors. As my findings show, the compensation of directors does not appear to be an accurate proxy for the motivation or involvement of directors. Future research could more accurately assess director motivation or involvement. One of the original goals of this study was to try and measure director involvement directly using a survey instrument. I sent a questionnaire to each individual serving as an outside director at the firms in the sample. I sent out a total of 4273 surveys and I received a total of 408 survey responses back, 404 which completed the entire survey. This led to a response rate of just over 9%. This meant that I was not able to test 2 planned hypotheses. Originally, I planned to argue that firms that have directors who are more fully involved in their duties will have higher performance, and that this effect would be strengthened when the directors had high levels of human and social capital. However, because of the extremely low response rate, I was unable to assess those hypotheses in this study. Future research that is more successful at directly assessing director motivation and involvement would be extremely useful in understanding director effectiveness.

CONCLUSION

In this study I developed a model of board effectiveness that incorporates director capabilities. I proposed and found that structurally similar boards may have very different impacts on the performance of the firm based on the capabilities of the directors. Boards comprised of directors with high levels of human capital can improve the performance of the firm. This model helps us to understand why some boards of directors seem better

than others at monitoring and at advice giving, even though they are similar in structure. The theory presented here drew upon research from the corporate governance literature to question one of the underlying assumptions used in corporate governance research. Research into boards of directors can be improved by using a more accurate picture of director capability. By questioning some of the assumptions underlying much of the work in corporate governance, we can gain a greater understanding of how boards work and what makes them effective.

STUDY TWO: DETERMINANTS OF BOARD-LEVEL HUMAN AND SOCIAL CAPITAL

Introduction

Large companies are almost continually recruiting directors to sit on their boards. Most public companies have boards of 10-15 people, and a portion of those directors either leave the board or are up for reappointment each year. This means that these companies are frequently faced with the task of retaining qualified director candidates and finding new qualified director candidates. The task of retaining and recruiting qualified director candidates is difficult and requires companies to provide directors with possible enticements to serve. However, the demands associated with being a director in a public company have increased dramatically over the past 70 years. Over time, the general consensus about the proper role of a director has developed into the view promulgated by agency theory, with the director as an active watchdog of management. Recent corporate scandals and other types of poor corporate performance have also led to calls for increased governance reform through greater director oversight. These proposed reforms and corporate governance practices imply greater duties for directors as well as an increased level of personal scrutiny.

The level of proposed reform and change present in the institutional environment sets the backdrop for this study. These broad institutional pressures have led to calls for companies to implement specific governance practices. However, given the fact that companies are responding to institutional pressure, one question that has been left unanswered is how companies' implementations of agency theory practices and reforms

will actually affect directors' personal interests, and by extension, how will they affect companies' ability to attract and retain good directors? What this study explicitly considers is how the differences in corporate governance practices across firms will affect companies' ability to recruit and retain directors with high levels of human and social capital. Little attention has been given to the preferences of directors or the implications of violating those preferences. The idealized perception of directors as active, independent monitors of action may be enshrined within the minds of institutional actors, but there has been little thought regarding how directors feel about serving in firms that emphasize taking on such an active role. In fact, most of the work on boards from an agency theory perspective does not even address the issue of how directors might react to increased demands. This study argues for the need to expand our theorizing on boards beyond agency theory alone and to view directors through a human resources perspective as a valuable asset that must be attracted and retained.

In this paper I go beyond a simple agency theoretic view of boards and draw upon research and theory from human resources, economics, and organization theory to argue that firm-level practices designed to improve board effectiveness by increasing independence may actually be decreasing the overall quality of directors sitting on boards. Specifically, many efforts by firms to improve board independence actually raise the costs of being a director. Active, independent boards require directors to give more input, prepare more fully, and participate more heavily. In addition, changes in the institutional environment surrounding boards have increased the risk to a director's finances and reputation. As the costs of being a director rise relative to the benefits, the most talented and experienced directors will be less willing to serve on boards and will

take fewer board appointments. The most experienced and well-connected directors face the most downside risk from potentially negative board appointments. In addition, directors with high levels of human and social capital also have the most choice regarding which boards they choose to sit on. Consequently, when the demands and risk associated with being a director vary across firms, the most qualified directors will be the most able to choose board appointments that match their risk preferences.

This paper contributes to theory and research on corporate governance by developing hypotheses about the unintended consequences of agency theory prescriptions for board effectiveness. Both agency theory research on boards and work on boards from a power perspective tout the value of having boards filled with active, independent directors who monitor managers. However, research from each of these perspectives has failed to consider how differences in governance practices across firms, and therefore differences in the roles and workloads of directors will affect individual directors' willingness to serve. The general prescription to all governance problems is that the board needs to be more active and do a more thorough job of evaluating managers' decisions. Lost in this solution is a consideration of how the costs of forcing directors to do more will influence their desire to participate in this process. I propose that companies that implement these governance prescriptions and compel directors to do more and face greater scrutiny will have a more difficult time recruiting and retaining directors with high levels of human and social capital.

A secondary contribution of this paper is its use of both agency theory and human resource theory to understand boards. Much of the literature on boards and corporate governance relies primarily on agency theory to understand boards and board

effectiveness. The proposed agency theory "fixes" are attempts at controlling the behavior of both managers and directors. In the case of managers, agency theory prescriptions attempt to control their behavior by installing active, independent directors who monitor their decisions. With regards to directors, agency theory prescriptions attempt to control their behavior by instituting strong pressures regarding the time and effort level they devote to their role. What these theoretical prescriptions haven't considered is the logic of market power. Directors are valuable human resources that have to be attracted and retained. There is a scarcity of directors with high levels of human and social capital. These individuals have the power to leave the board or to refrain from accepting appointments. By drawing upon human resource arguments the theory developed in this paper shows that a simple agency perspective is inadequate in understanding how differences in corporate governance practices will ultimately affect firms.

Background

In order to properly understand and develop theory regarding the effect of firm-level governance practices on directors, it is important to first consider how the prevailing conception of the board's role has changed over time. The current view of a director as providing active oversight of management is very different than the earliest conception of the role of a director. In fact, in Berle and Means (1932) initial work on the potential agency problems arising from the structure of the modern corporation, they actually identified the board as being part of the management of the firm, rather than being a mechanism for management oversight. Later, Jensen and Meckling (1976) introduced the

notion that boards may be able to monitor executives on behalf of shareholders. This led to a tremendous amount of research on boards of directors, most arguing that an effective board is comprised of outside directors who are not beholden to management (see Eisenhardt, 1989 for a review).

Despite the arguments for active, independent directors, there is evidence that suggests that the view of directors carefully watching over and evaluating the actions of management may be unrealistic. Mace's (1986) pioneering discussion with directors about what they actually do concluded that, while many directors provided valuable contributions, much of what directors did was symbolic and that they had little actual power. Similarly, later discussions with directors confirmed this idea while providing suggestions for how the situation might be changed (Lorsch & MacIver, 1989). Consider this quote by a director:

> In the early years, being invited to join a board was a sign of respect . . . some people served on a lot of boards because the duties were minimal. We weren't given much information before a meeting and even attendance wasn't essential. If you went, it was to listen to management describe its plans (Lorsch & MacIver, 1989 p. 5).

What this quote illustrates is that directors understood and at least partially acquiesced to this limited role. This theme of limited responsibility was also understood and implied in other practitioner articles that decried the fact that directors did not attempt to "rock the boat" by challenging management (Patton & Baker, 1987).

Other, more scholarly studies also indicate that directors may not have had as much power as the work in agency theory would suggest (Westphal, 1998; Zajac & Westphal, 1996). What both the practitioner and the scholarly studies suggest is a picture

of boards that is far removed from a pure agency vision of boards as vigilant monitors on behalf of shareholders (Hermalin & Weisbach, 1988). In reality, in the past, a board appointment may have been seen as an opportunity to network with other executives, to make some extra money, to learn about other companies, and to gain status and prestige (Lorsch & MacIver, 1989). And although this might not have been the most effective practice for shareholders, until recently there was little formal pressure on directors that would cause them to change their behavior.

Throughout the 1980s and 90s, articles in the scholarly literature and the popular press continued to call for directors to more fully take on the role of impartial observers and evaluators of management. Recently however, the institutional climate appears to have changed and the pressure for active, independent boards has intensified. Corporate scandals in the past few years have highlighted some of the potential problems that can occur when boards are not functioning effectively. In a personal conversation with me, a director said this:

> I think in some companies in the past, the board didn't really do its job. The board just rubber-stamped everything. Board members wouldn't always show up for board meetings because there was not that much riding on it.

What this quote illustrates is that directors in the past may not have been fully active in their role and that corporate scandals may be a natural result of this.

There is also increased pressure on directors from institutional owners, shareholders, and legislators. For example, directors face increased legal risk of lawsuits by shareholders if they fail or are negligent in their duties (Beck & Bhagat, 1997; Mooney, 2003). In addition, both the NYSE and the NASDAQ adopted policies in 2002

that require a majority of independent directors on the board. In addition, the proposed NYSE standards require that in order to be considered independent, a director must have no material relationship with the listed company. The NYSE standards also propose that the standing committees of the board should be composed entirely of independent directors.

This change in perspective and demand for directors is also reflected in new legislation. The Sarbanes-Oxley Act of 2002 requires that the audit committee be comprised entirely of outsiders. Overall, it is clear that many institutional players believe that boards need to be "fixed" and that the solution is increased independence. In fact, the evidence presented above demonstrates that the agency perspective on boards appears to have become institutionalized or taken-for-granted by many prominent institutional actors (Davis, 2005; Sanders & Boivie, 2004; Zajac & Westphal, 1995). It is interesting to note, however, that empirical research has shown weak effects at best of the effect of outsiders on firm performance (Bhagat & Black, 2001; Dalton et al., 1998).

What the preceding discussion illustrates is that the institutional climate has changed for directors. In the past, it may have been acceptable for directors to be less active and involved, but strong institutional norms as well as more direct, negative outcomes such as shareholder lawsuits indicate that this is no longer acceptable to shareholders and other activists. However, although there is general pressure on firms to adopt stricter corporate governance provisions and practices, there is still a significant amount of variance between firms on the form that adoption of these practices takes. In addition, although the notion that directors need to be independent watchdogs of managers is clearly supported both by agency theory and by institutional actors, what has

not been considered is how directors feel about taking on this role. This study considers how a number of different governance practices will affect directors' decisions to serve on boards. Using agency theory alone, it is not clear how directors will respond to differences in companies' governance practices, especially when there is still considerable variance across firms. In order to understand how the demands asked of directors by firms' governance profiles will affect their interests, it is important to consider directors interests for serving. In order to effectively do so, I develop theory that re-incorporates a human resource perspective back into our theorizing about corporate governance practices.

Theory Development and Hypotheses

Over the past 20 years, the dominant logic used to explain the role of directors has shifted dramatically. Zajac and Westphal (1995; 2004) have argued and provided evidence that the governing logic behind corporate governance has shifted from a human resources to an agency perspective. From the human resources perspective, managers are a valuable resource that may improve the firm's competitive position (Zajac & Westphal, 1995). The agency perspective assumes that managers, if not monitored, will pursue corporate strategies that advance their own interests rather than shareholders (Davis & Thompson, 1994; Zajac & Westphal, 1995). From this perspective managers' self-interested pursuits generate agency costs that must be managed either through incentive alignment or other governance mechanisms like monitoring (Fama & Jensen, 1983). This shift in perspective arose from investor dissatisfaction with corporate performance in the 1970s and led to an increased use of agency justifications for corporate governance

practices (Davis, Diekmann, & Tinsley, 1994; Davis & Thompson, 1994; Zajac & Westphal, 1995). In fact, the agency perspective on boards appears to have so broadly diffused that it has achieved taken-for-granted status among corporate stakeholders (Davis, 2005; Davis et al., 1994).

Under the governing logic of agency theory, the role of the board is that of "decision control" (Fama & Jensen, 1983). Directors are there to help combat the agency costs generated by self-interested managers through setting compensation plans, and monitoring executive action. Agency theory is rooted in an economic conception of individuals (Eisenhardt, 1989). Implicit in agency theory is the notion that directors are motivated to fulfill their duties out of self-interest. In fact, early work from an agency perspective argued that directors would be motivated to fulfill their duties out of a desire to maintain a reputation as a good director (Fama & Jensen, 1983; Hermalin & Weisbach, 1991; Weigelt & Camerer, 1988) or because of a legal obligation (Baysinger & Hoskisson, 1990). For instance, Fama and Jensen (1983) made the case that a market for directors exists and the presence of that market would provide directors with the necessary incentive to actively monitor executives in order to enhance their reputation as a director and therefore improve their chances of receiving multiple board appointments. There is some limited empirical evidence that supports this idea of a market for directors. For example, Gilson (1990) found that board turnover increases after firms declare bankruptcy. In addition, Srinivasan (2004) found that when a firm restated earnings downward board turnover was 51% in the following year, and that directors also lost 26% of their positions on other boards. Finally, a forthcoming study shows that directors at

restating firms are 70% more likely to lose their positions than are directors at firms that do not restate earnings (Arthaud-Day, Certo, Dalton, & Dalton, Forthcoming).

The prior discussion examined agency views of board effectiveness. It primarily addresses why directors who are on boards might choose to monitor executives. Although agency theory has a lot to say about what governance practices companies should implement, it has very little to say about directors interests regarding those practices. Agency theory has paid little attention to the question of why someone (especially someone who is already a highly-paid, extremely busy executive) might choose to serve on a board. In contrast, a human resource perspective on corporate leaders points to the importance of understanding why directors join boards, in order to attract and retain them. It is important to understand why directors serve on boards so that we can predict how differences in firms' governance practices will influence their willingness to serve. Understanding directors' interests is important if we are really interested in understanding how differences between firms' corporate governance practices will ultimately affect firms' ability to recruit and retain directors with high human and social capital.

This leads to my perspective that we need to re-incorporate a human resource perspective on directors into theory on corporate governance. An HR perspective on corporate leaders points to the importance of understanding why directors join boards, in order to attract and retain them. Lorsch and MacIver (1989) interviewed directors and asked them why they served on boards. Directors said that they accepted board appointments because it gave them the opportunity to make valuable contacts and friendships with other business leaders and improve their social status or prestige (Lorsch & MacIver, 1989). Another common response was that executives accepted board

appointments because they felt they could learn by being involved with firms facing a different set of strategic opportunities and challenges (Lorsch & MacIver, 1989). Many directors are non-CEO top executives and they believe that having board appointments may increase their likelihood of promotion to CEO in the future (Lorsch & MacIver, 1989). Directors also expressed a desire to serve to gain knowledge and to gain social contacts that might improve their options regarding job mobility (Lorsch & MacIver, 1989). My discussions and interviews with directors (in an admittedly non-random sample) provided answers that are consistent with those given by the directors talked to by Lorsch and MacIver, but with some interesting differences. For instance, some of the directors that I spoke with mentioned the compensation as affecting their decision to serve. In addition, many of the directors that I spoke with mentioned that they would only accept board positions where they felt they could learn and improve their skills by applying their experience in a new context.

The reasoning and logics that directors mention are very consistent with a human resource perspective of corporate leaders. Knowledge, valuable contacts, friendships, prestige, and job mobility are all resources that contribute to an individual's pool of human or social capital. Each of the benefits that directors mentioned (except for job mobility) should improve the ability of the executive to be useful and contribute at his/her home firm. What these various motivations support is the notion that directors choose to serve because they believe that their board service will improve their skills and qualifications as an executive. In addition, by listing a set of benefits and motivations, the directors are implicitly acknowledging that they believe the benefits of board service to outweigh the costs. Therefore, it is important to understand how differences in firms'

corporate governance practices will influence directors' perception of the demands and roles of a director and may therefore change the internal calculus of value for directors.

As mentioned previously, corporate stakeholders such as institutional investors, stock exchanges and regulators are pressing boards to become more involved and also more accountable for firm performance. These calls arise from the agency logic that dominates thinking about corporations (Zajac & Westphal, 2004). However, because of this over-reliance on agency theory, there has been little consideration in this debate for how companies' efforts to increase director involvement through the implementation of different governance practices may affect directors. This is clearly an important oversight, because implicit in agency theory arguments about self-interested directors is the notion that directors are influenced by the costs of being a director as well as the benefits. In fact, while normative agency theory implicitly draws upon utility theories of individual behavior to predict an executive's tendency to act in self-interested ways, or directors' desire to maintain their reputation; it has failed to explicitly consider how the costs of being a director might impact director's choice to serve on a board in the first place. In contrast, a human resource perspective of corporate leaders, articulates the importance of using salary and rewards to attract and retain scarce managerial talent (Zajac & Westphal, 1995). This perspective more explicitly considers the cost benefit equation and how that affects corporate leaders' decisions to use and deploy their managerial talent.

Agency and human resource perspectives are not incompatible. While they do have some differing assumptions about both managers and the firm, they also share some commonalities. Agency theory assumes that top managers are relatively fungible

resources who tend to be self interested (Davis & Thompson, 1994). On the other hand, human resource perspectives assume that corporate leaders contain unique strategic knowledge that is necessary and useful for the firm (Zajac & Westphal, 1995). However, both human resource and agency perspectives share the assumption that corporate leaders try to maximize their subjected expected utility. Where they differ is in what factors they explicitly consider would contribute to the utility of the corporate leaders. Agency perspectives generally assume that managers are driven by the desire to maximize their own personal wealth, and that financial costs and benefits are the primary driver of a manager's personal utility. This assumption generates the classic argument that managers generate agency costs because they are likely to pursue their own financial interests above the interests of the firm (Fama & Jensen, 1983; Jensen & Meckling, 1976). In contrast, human resource perspectives generally assume a broader range of motivations that managers may consider important when maximizing their personal utility. For instance, human resource perspectives assume that managers feel a sense of stewardship over the firm (Zajac & Westphal, 2004). Therefore, managers are likely to seek to maximize the firm's performance because doing so provides non-financial contributions to their personal utility. Consequently, incorporating a human resource perspective into our theorizing about director behavior makes a valuable contribution because it allows us to consider a wider array of potential costs that should affect directors' behavior.

It is especially important to think about the impact of the subjective expected costs of being a director because these costs are increasing. As early as 1990, one observer concluded that being the director of a public company is an "economically stupid decision" (Sahlman, 1990: 28). Sahlman (1990) argued that the pay does not

adequately reward for the time and for the reputational and financial risk. If that was true in 1990, it is increasingly true today. Included in those rising costs of being a director are the potential downside risks. Shareholder lawsuits are on the rise. Class action suits by shareholders rose by 60% in 2001 (Investor Relations Business, 2002), and 31% in 2002 (Mooney, 2003). Separate from the number of lawsuits, the size of shareholder lawsuits also rose dramatically in 2003 (Hofmann, 2003). Director's risk exposure to any particular lawsuit may also be rising. A recent court decision involving Disney was the first to allow a case against directors to stand not just because directors were involved in self-dealing, but merely because they were failing to uphold their duties (Knowledge at Wharton, 2003a). In addition, the recent decisions regarding the Worldcom and the Enron boards, have allowed individual directors to be personally liable above and beyond any indemnity protections. Finally, even some of the benefits that directors provide as being reasons to serve may be becoming less pronounced. For example, one of the reasons directors gave for accepting board appointments was for the increased social prestige. However, in today's climate, being a board member is most likely less prestigious than it once was. In fact, there is a definite risk for directors of damaging their personal reputation. Directors have a desire to maintain a reputation as a good director (Hermalin & Weisbach, 1991) and being associated as a director of Enron, Worldcom, or Tyco could taint a person's reputation for years to come.

As the costs and potential risks of being a director increase, and the benefits of being a director stay stable or decline, I would expect utility-maximizing individuals to be less inclined to accept board appointments. This idea is supported by anecdotal evidence and descriptive survey data. In a recent survey by McKinsey, 25% of directors

said that they had resigned from a board or turned down a new board appointment because of concerns about liability (Felton & Watson, 2002). Directors expressed similar concerns in my interviews. One of the questions I asked was about recruiting new directors. Here are a few of the responses I received:

> The heavy-handedness of some of the government reforms and the legislation will convince some good board candidates not to serve on boards, especially given current compensation levels.

> It is definitely more difficult to recruit directors today than in the past . . . The negative publicity associated with these corporate scandals has made directorships fall in their level of prestige. It used to be that sitting on a board was a badge of honor, or something to be proud of. It is not like that anymore . . . (Also) directors are on the hook more than in the past, both financially and repuationally. They are at a greater risk of real loss.

> It is more difficult to recruit directors today than in the past. This is not because people are completely unwilling to serve; it is just that they are cutting down on the total number of boards that they sit on. There is more time and energy required to be on a board today, and so people want to be on fewer boards.

A number of theoretical perspectives also support this general argument. For example, Beatty and Zajac (1994) argued that managers are risk averse and that managers of riskier firms were less likely to accept stock based forms of compensation. This made it more difficult for risky firms to counter the agency problem and forced these firms to rely on additional agency mechanisms to monitor executive action. Most directors are also top managers and are likely to be risk averse, so as the threat of lawsuits rises, they should be less willing to serve on boards.

As mentioned above, economic theories of motivation also support the notion that as the costs of being a director increase, a director should be less willing to accept an

appointment (Simon, 1959). Normative agency theory implicitly draws upon subjective expected utility (SEU) theory to describe the motivation of executives and directors. utility theory was developed by economists to predict individual behavior (Marschak, 1950). The basic premise of general utility theory is that rational decision makers have relatively stable preferences for different outcomes, and they choose their actions based on the likelihood of maximizing their utility (Arrow, 1951; Marschak, 1950). Utility theory also recognizes that because all outcomes are not equally likely, decision makers weigh their utility with regards to bearing risk and incorporate that into their choice (Arrow, 1951, 1958; Friedman & Savage, 1948) and that these weightings are based on subjective probabilities. While some of the specific assumptions of pure utility theory are problematic in that they don't conform to people's actual behavior (Tversky & Kahneman, 1974), the broad idea of maximizing subjective expected utility (SEU) has received extensive empirical support (Mosteller & Nogee, 1951; Schoemaker, 1982). Theorists working in SEU theory have also argued that as the problem becomes more significant and irreversible, the decision will conform more closely to traditional expected utility models (Beach & Mitchell, 1978). The risk of being sued and losing your reputation should clearly decrease a director's perceived utility from accepting a board appointment.

Theory regarding job choice may also help us understand how increased pressure on directors will influence their choice to serve. Literature on job choice focuses on two main factors, the content of job acceptance decisions (Bretz, Ash, & Dreher, 1989; Caldwell & O'Reilly, 1985; Schneider, 1987) and the process of job acceptance decisions (Wanous, Keon, & Latack, 1983). Content perspectives argue that individuals look at the

attributes of a job to decide which job or career to choose (Cable & Judge, 1996). They suggest that people choose jobs or organizations based on how well they fit a perceived emotional or psychological need (Bretz et al., 1989; Cable & Judge, 1996). The process perspective looks at how information is used to make a choice about which job or organization to join. These studies primarily look at job choice using expected value models (Wanous et al., 1983). Expectancy theory shares some similarities to utility theory discussed above. With regards to job choice, it argues that individuals look at the attractiveness (valence) of the potential outcomes associated with a job or organization, and then they also look at the likelihood (instrumentality) that those outcomes will be present (Wanous et al., 1983). As the attractiveness of the potential outcomes from board service goes down, so will the likelihood of accepting the position. Changes in the governance climate should have lowered the attractiveness of the potential outcomes and also raised the likelihood of the most negative outcomes occurring.

The preceding theoretical perspectives all argue that as the position of director becomes less attractive, people will be less willing to serve and accept the position. Subjective expected utility theory, risk aversion, and the literature on job choice, all support the underlying premise of a human resource perspective on corporate leaders. Directors, who possess pools of valuable skills, experience, knowledge, and contacts, will consider the utility of accepting and/or retaining board positions. This should be especially true of the directors with the highest levels of human and social capital. Human and social capital of executives accrue through experience, success, and the application of valuable time and effort. Directors with high levels of social capital have the most to lose with regards to their reputation and will be most averse to the risk of

damaging that reputation. As the risks associated with being a director rise, these talented directors will be wary of the losses they may incur because of their board service, and will decline board positions more frequently than will directors with less human and social capital. In addition, corporations will have a harder time attracting new directors and retaining the qualified ones they have. This is a labor market, and changes in demand may reduce the supply of the most qualified candidates.

In addition, as a director accumulates human and social capital, they can be increasingly selective about the boards they serve on. Thus, boards that require directors to make greater investments of their time and effort and incur greater risks will have more difficulty competing for the best directors. According to a recent survey the best directors are likely to receive multiple board offers and tend to not accept every board invitation they receive (Felton & Watson, 2002). In addition, while the directors with the most human and social capital may have the most to *lose* if a directorship goes badly, the directors with the most human and social capital also have less to *gain* from additional appointments. They already have a high reputation and a lot of experience, therefore the learning and status benefits they will derive from any particular appointment is low. This will allow them to be more selective about which appointments they accept. Consequently, there is a greater likelihood that the costs of a demanding or high risk appointment will outweigh the benefits for the directors who bring the most human and social capital to the board.

Taken together, these perspectives support the notion that as the costs of being a director rise, it should be more difficult to recruit and retain directors with high levels of human and social capital, without proportional increases in benefits. Therefore, factors or

governance practices that increase the duties (or that increase the difficulty of those duties) of the board should lead to lower quality directors over time. In a recent example, Warren Buffet retired from the board of Coca-Cola citing time constraints (AP, 2006). The factors I consider in the first three hypotheses are factors that have been frequently used in the governance literature to predict increased board independence. For example, it is often argued that increases in the number of outside directors will improve the independence and functioning of the board. However, this might also signal to directors that their role has changed and they are expected to expend additional effort. Outsider dominated boards may signal to directors that they will be expected to put extra time into their board duties. Because directors with high levels of human and social capital have the most experience and the best reputations, they will have more options and therefore these boards will be less attractive. A greater proportion of outside directors may also be a signal that this board has relatively strong norms of involvement and any new director will be expected to work hard and contribute. For the most experienced and connected directors this high level commitment of time and effort should be less appealing. During my interviews with directors it was clear that they perceived the outsider ratio as a strong signal that more was expected of them. As a director with high levels of human and social capital goes about deciding how to maximize their subjective expected utility, they will be less interested in boards that require greater investments of time and energy.

This leads to the first hypothesis.

Hypothesis 1a: Increases in the proportion of outside directors at t1 will be negatively related to the overall human capital of the board at t2.

Hypothesis 1b: Increases in the proportion of outside directors at t1 will be negatively related to the overall social capital of the board at t2.

Similar arguments can be made about the levels of blockholder and institutional ownership. Agency theorists often argue that blockholders and institutions provide additional monitoring of managers (Sanders & Boivie, 2004). However, they may also signal to directors that they will be under greater scrutiny from very interested third parties (Black, 1992; Burkart, Gromb, & Panunzi, 1997; Tihanyi et al., 2003). Directors may be wary of accepting board positions when the companies have large and powerful shareholders watching their every move. In addition to higher expectations about involvement, larger proportions of blockholder and institutional ownership may involve a loss of autonomy for directors. This may signal to directors that they will be monitored, just as they should be monitoring executives. People are generally averse to direct, regular monitoring of their behavior (McNamara, Moon, & Bromiley, 2002), especially if they are accustomed to a high degree of autonomy in their work. In addition directors often don't trust institutions or blockholders to monitor well (Barnard, 1991; Taylor, 1990). They are used to having a lot of autonomy, and they generally believe that they are more knowledgeable about the firm than outsiders (Taylor, 1990).

This leads to the second and third hypotheses.

Hypothesis 2a: Increases in the level of blockholder ownership at t1 will be negatively related to the human capital of the board at t2.

Hypothesis 2b: Increases in the level of blockholder ownership at t1 will be negatively related to the social capital of the board at t2.

Hypothesis 3a: Increases in the level of institutional ownership at t1 will be negatively related to the human capital of the board at t2.

Hypothesis 3b: Increases in the level of institutional ownership at t1 will be negatively related to the social capital of the board at t2.

In addition, factors that increase the risks of being a director, such as lawsuits or fewer director protections against liability, should make it more difficult to attract and retain directors with high levels of human and social capital. The threat of being sued and possibly facing large personal liability is very real and should make directors wary of accepting board positions at firms that have been sued recently (Cox, 2002). In the past, the actual risk of a financial loss was quite low (Black, Cheffins, & Klausner, 2005). However, despite the fact that an actual financial loss was quite low, the availability heuristic suggests that in an expected utility calculation directors will overweight the likelihood of the risk due to its salience (Tversky & Kahneman, 1974). The tendency of directors to overestimate the risk of liability is also supported by some recent survey evidence that found that outside directors believed that out-of-pocket liability occurred in about 5 percent of all shareholder suits, even though the actual number was much less than 1 percent (Klausner, Munger, Munger, Black, & Cheffins, 2005).

These lawsuits and horror stories are also very salient to directors. The directors I talked to are very aware of recent lawsuits against the big companies. Moreover, while the actual risk of financial loss may have been low in the past, that risk is increasing due to recent events. The recent decisions regarding the Worldcom and Enron directors are the largest out-of-pocket payments by directors in US history (Klausner et al., 2005; Masters & Day, 2005). The former directors of Worldcom and Enron agreed to pay out

$31 million dollars out of their own pockets in addition to $36 million being paid out by their liability insurance. In addition, even if a shareholder lawsuit is never successfully prosecuted, there are still costs to directors in terms of time and money spent defending the suit. Finally, even if a director never suffers financially from a shareholder lawsuit, there are still real risks to a director's reputation. The directors at Tyco did not suffer out-of-pocket financial losses, but no one would argue that they did not have a major loss to their reputations. Directors with high levels of human and social capital have the most to lose in terms of reputation, and thus will be the most careful to minimize these risks. Therefore I predict:

Hypothesis 4a: Lawsuits by shareholders in the prior year will be negatively related to the human capital of the board at t2.

Hypothesis 4b: Lawsuits by shareholders in the prior year will be negatively related to the social capital of the board at t2.

Corporate governance provisions that indemnify and protect directors against liability, as well as against the loss of their position should make the position more appealing. Corporations can adopt governance provisions that provide directors with legal liability in the face of shareholder suits (Gompers, Ishii, & Metrick, 2003). In addition, firms can adopt governance provisions that provide for the compensation of the directors if they were to lose their seat due to an acquisition or other external event (Gompers et al., 2003). Firms can better compete for the directors with the highest levels of human and social capital if they offer these provisions, and those without these provisions should have difficulty attracting and retaining qualified directors. Therefore I predict:

Hypothesis 5a: More director protections at t1 will be positively related to the overall human capital of the board at t2.

Hypothesis 5b: More director protections at t1 will be positively related to the overall social capital of the board at t2.

Finally, protective provisions that help protect directors against liability, should moderate the negative risk from recent lawsuits. Firms with protective provisions should appear less risky in the presence of lawsuits than firms without such provisions. Directors with high levels of human and social capital should feel less threatened by lawsuits when these provisions are present. Therefore for my final hypothesis I predict:

Hypothesis 6a: Director protections will moderate the negative effect of shareholder lawsuits on the overall human capital of the board.

Hypothesis 6b: Director protections will moderate the negative effect of shareholder lawsuits on the overall social capital of the board.

Together, these hypotheses argue for a contrarian's view of proposed governance and agency reforms, by theorizing how they might lead to boards filled with individuals who have less human and social capital.

Research Methodology

PRELIMINARY INTERVIEWS

During the development of this study, I conducted preliminary interviews with seven board members and also with one institutional investor. The purpose of these interviews was to inform the theoretical ideas of this study and to see whether these ideas

were present in the minds and thoughts of practicing directors. These discussions helped provide valuable insight while I was shaping my hypotheses. I conducted the interviews in a semi-structured format. I asked the individuals questions regarding their thoughts regarding director effectiveness and current trends and developments in the corporate governance landscape. The directors were told that I was studying board effectiveness, and that I was looking for insight from practicing directors. After each interview I transcribed my written notes. I have used quotes from these interviews throughout the text to provide illustration and richness to the theoretical discussion.

SAMPLE AND DATA COLLECTION

The theory generated in this dissertation is interested in the board of directors of large public companies, and the issues arising in the effective governance of those companies. Therefore, in order to test these hypotheses I will study large public companies. I have chosen to study large firms for several reasons. First, most of the theorizing and empirical research regarding boards of directors has been conducted on large firms. By conducting this study using a similar sample, I enhance the comparability of my findings with those of prior research. Second, archival data on director characteristics is only available on mid-to large sized firms. Consequently, the conclusions of this study are only applicable to large firms. I use "intertypical" sampling in this study, by selecting firms across multiple industries rather than examining a group of firms within a single industry (Kimberly, 1976). Intertypical sampling allows my results to be more generalizable across different firms and industries. This study uses archival data on firms in the Fortune 1000. The Fortune 1000 is a yearly list of the largest

1000 firms in the US economy. I selected a random sample of 650 of the firms that were members of the Fortune 1000.

In order to test the hypotheses presented in this study, I collected archival data on each firm selected above over three years. My independent variables were measured from 2001-2003 and my dependent variables were measured from 2002-2004. The hypotheses in this study are explicitly concerned with how changes in a prior year will affect the composition of a firm's board in subsequent years. Therefore, a longitudinal design using a panel data set is appropriate.

The archival data for this study was collected from a number of sources. Data on firm sales and performance was collected from COMPUSTAT. Data on firm diversification was collected from the COMPUSTAT segment database. Information on compensation both as executives and directors was collected from the COMPUSTAT EXECUCOMP database and from firm proxy statements. Information on director attributes was collected from the Corporate Library, the *Who's Who Directory of Corporate America*, Standard and Poor's *Register of Corporations, Directors and Executives,* and company proxy statements. Information on firm's foreign locations was collected from the *Directory of Corporate Affiliations*.

MEASUREMENT OF VARIABLES

Dependent Variables

The dependent variables are board *human and social capital*. I measured five indicators of human capital and three indicators of social capital. The measures of human capital are *education level, total top management experience, average performance of*

director's home company, *firm tenure*, and *strategic relatedness of director's board appointments*. For education level, total top management experience, and firm tenure, the measures of human capital were calculated for each board member and then summed to come up with a total level on the board. Conceptually, human and social capital are similar to other types of capital in that the overall level is important, so using sums is appropriate. However, as a robustness check, I did run models where I used the averages and my results were unchanged. Obviously, because the composite scores contain sums, the size of the board could over-inflate the levels of human and social capital, but in all of my models I control for board size. For the other measures of human capital, the score will be calculated for each board member and then averaged to come up with an average level on the board. For these measures, it is unclear what a sum of performance or relatedness would mean, so using an average is better.

Education level was measured as the number of years of schooling (Kosnik, 1987; Wiersema & Bantel, 1992). Education level is a very common indicator of human capital (Bantel & Jackson, 1989; Hambrick & Mason, 1984; Pennings et al., 1998; Wiersema & Bantel, 1992). The reason that increased formal education is a useful indicator of human capital is because it helps individuals develop more effective ways of learning and processing information. Formal education promotes meaningful versus rote learning of information (Singley & Anderson, 1989). Formal education also shapes individual's mental models, and teaches people cognitive short-cuts (Hitt & Tyler, 1991). Higher levels of TMT education have been associated with both greater firm innovation (Bantel & Jackson, 1989; Kimberly & Evanisko, 1981) and greater organizational change (Wiersema & Bantel, 1992).

Total management experience was measured by examining the number of years each individual has served as a top executive (Carpenter & Westphal, 2001). Managerial skill is complex, rare, and difficult to acquire (Castanias & Helfat, 1991; Pennings et al., 1998). Experience is one way someone can move from being a novice to being an expert (Chi et al., 1982). Experience allows the transfer of tacit knowledge (Singley & Anderson, 1989) that may be difficult to acquire simply through education or reading. As tacit knowledge is acquired, individuals are better able to build knowledge structures that promote more powerful search heuristics (Chi et al., 1982). Experience also helps individuals see commonalities between situations and develop principle-centered knowledge structures (Loewenstein et al., 1999). These knowledge structures enhance future problem solving by helping experts solve problems more quickly, and by facilitating individual ability to focus on relevant information cues (Singley & Anderson, 1989). By helping individuals become experts in managerial decision-making, prior managerial experience is directly related to greater expertise and skill (Pfeffer & Davis-Blake, 1986).

Performance of directors' home companies was calculated by using the industry-indexed return on equity assets of the company where the director is also an executive for the prior year. Non-executive outside directors were excluded from this measure. Although firm performance is affected by numerous factors, studies have shown that top executives characteristics and decisions also influence firm performance (Finkelstein & Hambrick, 1996; Wiersema & Bantel, 1992). Directors who come from companies with high levels of performance should be better able to evaluate the actions of the focal firm's management. If superior management skills are rare and difficult to acquire (Castanias &

Helfat, 1991), then these skills should lead to higher firm performance.

Firm tenure is the number of years the individual has served as a director at the focal firm. Firm tenure is a proxy for firm-specific human capital (Buchholtz et al., 2003). The longer a director has served on the board of a firm, the more that director will know about the company and the greater will be that director's expertise.

Following Carpenter and Westphal (2001) I measure the *relatedness of board members' other appointments* along four dimensions: product market, foreign market, diversification, and degree of internationalization. Directors rely on schema driven knowledge structures for decision-making, and these schema are heavily influenced by directors' prior experience (Carpenter & Westphal, 2001). Experience in strategically similar companies should help build knowledge structures that are relevant to the types of problems likely to be confronted by the focal firm (Haunschild, 1993; Useem, 1982).

When determining whether a director is associated with firms that are strategically related to the focal firm it is important to look upon strategic dimensions that are widely held as being important. Product market similarity was measured by examining the number of board appointments that share the same primary SIC code as the focal firm and then dividing that by the total number of board appointments.

Foreign market similarity was measured by counting the number of appointments the director has to firms that share a primary foreign market, and then normalizing this by the total number of appointments. For example, if a director served on the board of two firms that report their primary foreign market as the UK then that director's appointments would show a high degree of similarity.

To examine the extent to which the director's board appointments are similar in

their diversification profile, I use an entropy-based diversification index (Palepu, 1985). The diversification score is calculated as $\Sigma P_i \ln (1 / P_i)$, where P_i equals the percentage of sales a firm received from its i^{th} 6-digit NAICS segment. I then calculated the absolute difference between the diversification score of the focal firm and the diversification score of each of the firms with which the director is affiliated. I then add the scores and normalize them by the number of total appointments. It is important to average these scores in order to avoid inflating the overall similarity of a director with many board appointments that are somewhat similar. For instance, if a director had affiliations with 10 other firms that were each similar by .1 this would appear equally similar to a director that has affiliations with 2 other firms that are each similar by .5. By averaging these scores the true level of similarity in director appointments is represented more accurately. This value was then subtracted from the highest value of diversification dissimilarity in order to create an index of relatedness. While there is not universal agreement (Allison, 1990), I must note that some researchers have argued that using difference scores is problematic (Cronbach & Furby, 1970; Edwards, 1994). Therefore, in order to be thorough each time a difference score is used I ran additional analyses to make sure the difference scores used satisfied the constraints outlined by Edwards (1994). I followed the procedure outlined by Edwards (1994) and subsequently used in other research (Milton & Westphal, 2005)and each of the measures used satisfied all four constraints specified by Edwards. I also ran analyses where I used the constrained and unconstrained equations and my results were unchanged, which indicates that using a difference score is appropriate for this analysis.

To measure the extent to which directors serve on boards that have similar

degrees of internationalization, I used a modified version of Sullivan's (1994) composite measure of the degree of internationalization (DOI) (Carpenter & Westphal, 2001). The DOI measure examines separate but distinct areas of internationalization. The DOI measure usually has three components, but because of issues regarding data availability I was only able to use two of the three components. The first characteristic it examines is foreign sales. The level of foreign sales is calculated as the ratio of foreign sales to total sales. This characteristic reflects how much a firm depends on sales to foreign markets. The other measure is geographic dispersion, and this is measured by examining the number of country subsidiaries as a percentage of the total number of country subsidiaries represented in the sample. Each of these characteristics can range from 0 to 1, and the DOI is calculated by summing the measures. Prior research has shown that these measures have high inter-item reliability and load on one factor (Carpenter & Westphal, 2001; Sullivan, 1994) except when the firms studied are extremely young (Carpenter et al., 2003). However, although the firms in this sample are large and well-established, I tested the reliability of this index in my own sample and also ran factor loadings to make sure that this measure demonstrates a reliable single-factor loading. The reliability coefficient was 0.81 which is acceptable, and there was a clear single factor loading for both areas of internationalization with each item loading equally at 0.77. I calculated the relatedness of this measure by subtracting the absolute difference between the focal firm and the other firm's with which a director is affiliated and then averaging this score. This value was then subtracted from the highest value of DOI dissimilarity in order to create an index of relatedness.

The measures of social capital are *total board ties*, *performance of interlocks*, and

social club memberships.

Total board ties was measured by examining the total number of other firms that the focal firm is connected to through director interlocks (Davis, 1991; Finkelstein, 1992; Haunschild, 1994). I excluded duplicate connections—so this measure effectively captures the firm's degree centrality in the board interlock network.. Being highly connected may give directors access to information that leads to more innovative ideas for the focal firm (Powell et al., 1996; Rogers, 1995). Highly connected directors may also be more able to get information that is unique or difficult to transfer (Uzzi, 1997). The number of directorships an individual has is a measure of director power because it allows a director to absorb uncertainty in the institutional environment (Finkelstein, 1992). Total board ties are also an indicator of a firm's centrality within the network of interlocked firms (Gulati et al., 2000).

Performance of interlocks was measured using the average industry-indexed performance of the firms that the director is tied to. This will then be averaged across all directors (Finkelstein, 1992). When the companies that a director is connected with do well, that should increase his/her prestige and reputation (Fama, 1980; Finkelstein, 1992). It should also be an indicator, although indirectly, of that director's access to useful or quality information. Being a director of a high performing company should also indicate that the director understands effective board processes and is associated with companies that are making good decisions. The more a director is exposed to these kinds of activities, the better he or she should be able to use that information in the focal firm.

Social club membership was measured using the total number of memberships to exclusive social clubs listed in the Social Register (Belliveau et al., 1996; Palmer &

Barber, 2001). This measure did not exclude duplicate ties to social clubs, because it is important to understand how prestigious the firm's individual directors are as a group, rather than just the total number of social clubs that the board would have access to. Literature on corporate elites argues that the most prominent corporate directors form an elite group in society that has a tremendous amount of power and influence (Zeitlin, 1974). Social club membership has been used in the past as an indicator of the status aspect of social capital (Belliveau et al., 1996). Having prestigious directors may help the firm gain access to financial resources in times of trouble (Domhoff, 1983; Uzzi, 1999). In addition, high-status directors may be able to directly or indirectly influence legislation that affects the firm (Domhoff, 1983; Useem, 1982).

Human and social capital are stocks of resources that are embedded or tied to individuals, and are composed of multiple factors. They are not latent variables, like personality or motivation, which are measured by using indirect indicators and then assuming the presence of an unmeasured but real factor. Instead, they are pools of resources available to individuals that can be measured using composite indicators. Therefore in my analyses I will model the constructs of human and social capital by measuring multiple indicators and then combining these indicators using summed z-scores and using the generated total score in the regression equations. For the purpose of this study, summing the data using z-scores is simply a data reduction technique used to aggregate my constructs and to facilitate the analysis of multiple indicators. I have chosen to use summed z-scores for a couple of reasons. Factor analysis techniques combine indicators by examining the level of shared variance between measures, and then by creating a composite variable using weightings based on that shared variance. However,

conceptually human and social capital may be indicated by different measures that are not likely to be correlated, such as education and experience where there is a direct trade off between the two. So, using a factor analytic approach is not appropriate. One potential limitation of using a summed z-score is that it assumes an equal weight for each indicator of human or social capital. While I do not believe that each measure of human and social capital necessarily has an equal impact on an individual's overall level of human and social capital, extant theory does not suggest an alternative weighting scheme a priori. In addition, research has shown that equal weighting of indicators may produce regression results that are very similar to more sophisticated weightings (Lawshe & Schucker, 1959; Schmidt & Kaplan, 1971; Stanley & Wang, 1970). In fact, in some cases simple unit weighting as is done here provides superior estimates than does a regression weighting of composite measures (Schmidt, 1971).

Independent Variables

Proportion of outsiders on board was measured as a ratio of outside to inside directors. Directors are classified as being outside if they are not employed by the firm. Having a high proportion of outsiders on the board is one of the most commonly used measures of board independence (Dalton et al., 1998; Kosnik, 1987).

Blockholder ownership was measured as the percentage of company stock owned by parties with at least a five percent stake in the company, who are not officers or directors and who have no business ties to the firm (Bethel & Liebeskind, 1993). The data on this variable came from multiple sources including proxy statements and other databases. At times the data in the proxy statements was ambiguous about the exact

nature of the ownership of shares. Because of this, at times I was forced to make judgment calls about the level of blockholder ownership. Whenever this occurred, I coded a dummy variable for estimating the level and I include that dummy variable in all models.

I measure *institutional ownership* as the total percentage of company stock owned by institutional investors like pension or mutual funds (Bethel & Liebeskind, 1993).

Shareholder lawsuits were measured as the total number of lawsuits filed by shareholders of public companies in the prior year. I gathered this data from Institutional Shareholder Services. Shareholder lawsuits are a direct measure of legal risk that directors face. In order to ensure robustness I ran models measuring this in two different ways. I first measured all lawsuits filed by shareholders in the prior year and entered this number into my models. All models reported use this figure. For robustness I also ran models that included a sum of all lawsuits over the prior 6 years and my results were unchanged. I would have liked to measure the size or magnitude of the lawsuits, but a large proportion of these suits are settled and so information on size was unavailable.

Director protections were measured as the number of corporate governance provisions the company has adopted that protect directors from liability or other types of loss. This data comes from the Investor Responsibility Research Center which tracks detailed information on corporate governance provisions adopted by firms. I included all of the protections that the IRRC classifies as director protection policies as well as four others, specifically: blank check, classified board, non-financial duties of directors, and poison pills. These four additional policies should be appealing to potential directors because they give the board more power relative to shareholders. The director protections

category contains six provisions that are "designed to insure officers and directors against job-related liability or to compensate them following a termination" (Gompers et al., 2003 p. 111). The six provisions are: (1) compensation plans that allow directors to accelerate option payout in the event of a change of ownership; (2) indemnification contracts that protect a director from expenses occurred from lawsuits pertaining to their conduct; (3) golden parachutes that provide compensation upon termination due to a merger or acquisition; (4) indemnification bylaws or charters that are similar to the contracts listed in part (2) but apply to the entire board; (5) charter or bylaw limitations on directors' personal liability for breaches of the duty of care (to the extent of state law); and (6) severance agreements that provide compensation in case of termination but that are not contingent upon a change of ownership like golden parachutes (Gompers et al., 2003). The protections variable is constructed by adding one point for every provision that is present at the focal firm. This does not calculate the weight or impact of any one provision, but it does show how many different provisions a company has adopted. Firms that have fewer protections for directors should be more risky, and should be less appealing to directors with high levels of human and social capital who have more potential options for appointments. The IRRC database does not measure director protections every year, so the prior year's protection variable is carried forward until the database is updated. In about 5 or 6 cases a firm was not entered into the IRRC database until after the initial observation window. In these cases, the IRRC data was coded as the backfilled based on the first year for which data is available and a dummy variable was coded based on this procedure. I subsequently include this dummy variable in all of the models to control for any bias introduced due to the estimation of data.

Control Variables

In all of my models I control for the prior level of human or social capital on the board using an instrumental variable to control for the problem of autoregression (Haveman, 1993). Because this study is about how changes in the costs of being a director will affect directors' willingness to serve on boards, it is important to also consider the benefits. Therefore in all of my models I control for the compensation of directors in three different ways. *Average total director compensation* was measured as the total annual compensation package of a director including annual retainer, meeting fees, and stock option grants. The data on director compensation is not as uniformly presented as the data on executive compensation. In some cases, the number of options granted (or the value) was ambiguous. In these cases, I calculated the value of the options based on the information present in the proxy statement, and I coded a dummy variable to indicate the ambiguity. I subsequently include this dummy variable in all of the models to control for any bias introduced due to any estimation of data. *Percentage of contingent compensation*, was measured as the proportion of total director compensation granted in long-term or contingent forms such as stock options (Zajac & Westphal, 1994). This measure was then averaged across all of the directors on the board. For stock options, I used the Black-Scholes method of valuation (Zajac & Westphal, 1994). The Black-Scholes method is the most widely used, and prior research has shown that it is highly correlated with the SEC valuation method and usually gives similar results when used in analysis (Sanders, 2001). *Level of firm ownership by directors* was measured as the percentage of company stock owned by the directors of the firm (Sanders & Boivie, 2004). This measure was then divided by the number of total directors on the board to get

the average level of ownership by each outside director. This also controls for those directors who are also blockholders of the firm.

The attractiveness of a firm to directors may be highly influenced by prior firm performance. In order to control for that effect, I plan to include *prior firm ROA* in the models. Theory has shown that *firm size* may affect firm performance (Kimberly, 1976). Firm size may also affect the board's ability to influence firm outcomes. Because firm sales are usually highly skewed, firm size was measured using the log of sales. Logging this variable should allow it to more accurately reflect the assumptions of normality present within regression models. *Level of unrelated diversification* was calculated using an entropy index of unrelated diversification (Davis & Duhaime, 1989; Palepu, 1985). The diversification score is calculated as $\Sigma\ P_i \ln (1 / P_i)$, where P_i equals the percentage of sales a firm received from its i^{th} 2-digit SIC segment that is outside its primary industry. This index weights the level of involvement in each area that is unrelated to the primary business of the firm. Firms that have high levels of unrelated diversification will require more preparation time and effort to understand, and place a greater information processing load on directors (Henderson & Fredrickson, 1996) and should therefore be less appealing to work for.

The size of the board may affect how well the group functions (Ancona & Caldwell, 1992). *Board size* is simply the total number of directors on the focal firm's board of directors. *CEO contingent compensation* may affect the level of monitoring necessary by the board (Westphal, 1999). Therefore I plan to control for the level of a CEO's pay that is paid in long-term forms. This was measured similar to the above description of how board contingent compensation was measured. *Appointments after the*

CEO can affect the power of directors and their ability to contribute to board meetings (Westphal & Zajac, 1995). Therefore, I will control for the number of directors that were appointed after the current CEO took office. *Leadership structure* can also affect the distribution of power between the CEO and the board (Westphal & Zajac, 1995) therefore, I plan to control for whether the CEO is also the chairman of the board. This was coded as a dummy variable, where a one indicates the positions are held by the same individual. The diversity of the board may affect the functioning of the team (Hambrick et al., 1996; Knight et al., 1999; Pelled et al., 1999). To control for this I calculated a heterogeneity measure based on the *diversity of director's ages*.

Estimation Methods

ANALYSIS

In this study both my dependent and independent variables are continuous in nature and are measured over time. This results in a cross-sectional panel data set. Cross-sectional panel data can be tested using pooled time-series analyses. These analyses allow use of the full sample, and reflect the average effect of the independent variables over the full study, thereby giving more accurate estimates than cross-sectional sub-samples.

Because the data set contains pooled observations, there is a lack of independence among observations which violates the assumptions of OLS and subsequently OLS will produce biased estimates. I therefore used generalized least squares (GLS). GLS is designed for analyzing longitudinal data that is continuous in nature and is especially good at handling the problem of autocorrelation that occurs with longitudinal models.

GLS corrects for autocorrelation across panels by generating an autocorrelation coefficient. In addition, I was able to run panel-specific autocorrelation coefficients. What this does is the models generate a separate auto-correlation coefficient for each panel (firm) in the data set. The end result is a model that controls for firm-specific correlation across time and does a better job of controlling for autocorrelation than a simple pooled autocorrelation coefficient. All models reported use the panel-specific autocorrelation. Although, for robustness, I also ran models using the pooled autocorrelation coefficient and I get substantively similar results. One limitation of GLS is that it does not allow me to run random or fixed effects models. However, for this study, random effects models are not appropriate because they assume that the subject effects are completely uncorrelated with the predictors, which is unlikely here. In order to simulate fixed effects models, I ran models where I mean-deviated each variable in the regression equation. This procedure simulates fixed-effects models. The results were not substantively different, so I report the simpler models.

Results

Table 4 provides descriptive statistics for the variables in this study. Some of the predictors are significantly correlated to ensure that multicollinearity was not a problem. I assessed my models using matrix decomposition techniques, as recommended by Judge et al. (1988: 870). In all of the models the highest condition index was 17, well under the highly conservative upper limit of 20 recommended by Belsley (1991), which strongly indicates that collinearity did not affect the hypothesis tests. In addition, in order to better understand my results presented below, I also ran models where I separated the individual

components of the human and social capital composites, and ran the models with each component as a separate dependent variable. For social capital, each of the three individual components had similar results on all of the independent variables. Therefore, it appears that no one component of social capital has a disproportionate impact on the overall results. For human capital, however, some of the individual measures had results that strongly mirror the results with the composite measure, while other individual measures had results that were slightly different. Prior top management experience, overall board tenure, the performance of director's home companies, and the degree to which directors board appointments are related on the degree of foreignness all produced results that mirror the results of the composite measure. When director education and the other relatedness measures are run separately, the hypothesized effects are less significant. What this means is that the results presented below using a composite measure of human capital are most strongly influenced by prior top management experience, overall board tenure, the performance of director's home companies, and the degree to which directors board appointments are related on the degree of foreignness.

HYPOTHESIS TESTS

Table 5 lists the results for the GLS analyses. The dependent variable of human capital was used in one set of models, and social capital was used in a separate set of models. For human capital, Model 1 contains the control variables, Model 2 adds the hypothesized main effects, and Model 3 further adds the hypothesized interaction of director protections and shareholder lawsuits. For social capital, Model 4 contains the control variables, Model 5, adds the main effects, and Model 6 adds the interaction.

Hypothesis 1a predicted that the proportion of outsiders at t1 would lead to lower levels of human capital at t2. As Model 2 shows this hypothesis was supported. The coefficient of -4.466 was negative and significant ($p<.001$). Hypothesis 1b predicted that the proportion of outsiders at t1 would lead to lower levels of social capital at t2. This hypothesis was also supported. The coefficient of -3.407 was negative and significant ($p<.001$).

Hypothesis 2a predicted that the level of blockholder ownership at t1 would lead to lower levels of human capital at t2. As Model 2 shows, this hypothesis was supported. The coefficient of -0.815 was negative and significant ($p<.01$). Hypothesis 2b predicted that the level of blockholder ownership at t1 would lead to lower levels of social capital at t2. As Model 5 shows there is only marginal support for this hypothesis. The coefficient of -0.560 is negative and marginally significant ($p<.10$).

Hypothesis 3a predicted that the level of institutional ownership at t1 would lead to lower levels of human capital at t2. As Model 2 shows, this hypothesis was not supported. The coefficient of -0.052 is in the predicted direction but is not significant. Hypothesis 3b predicted that the level of institutional ownership at t1 would lead to lower levels of social capital at t2. As Model 5 shows, this hypothesis was not supported. The coefficient was negative but not significant.

Hypothesis 4a predicted that the number of shareholder lawsuits in the prior year would lead to lower levels of human capital at t2. As Model 2 shows, the main effect was not significant by itself, but as Model 3 shows, it becomes significant in the presence of the interaction. Because the significance changes based on the presence of the interaction, I will only interpret the result of the interactive model. Hypothesis 4b predicted that the

number of shareholder lawsuits in the prior year would lead to lower levels of social capital at t2. As Model 5 shows, this hypothesis was not supported. The coefficient is in the opposite direction than predicted and is significant ($p<.05$).

Hypothesis 5a predicted that the number of director protections at t1 would lead to lower levels of human capital at t2. As Model 2 shows, the main effect was significant and the hypothesis was supported, however, as with H4a, the significance changes based on the presence of the interaction. Hypothesis 5b predicted that the number of director protections at t1 would lead to lower levels of social capital at t2. As Model 5 shows, this hypothesis was not supported. The coefficient is in the direction predicted, but is not significant.

Hypothesis 6a predicted that the number of director protections would moderate the negative effect of shareholder lawsuits on the levels of human capital at t2. As Model 3 shows, this hypothesis was supported. The coefficient of 0.237 was positive and significant ($p<.05$). I will discuss this result further below. Hypothesis 6b predicted that the number of director protections would moderate the negative effect of shareholder lawsuits on the levels of social capital at t2. As Model 6 shows, this hypothesis was not supported. The coefficient was not in the predicted direction and was not significant.

Because adding the interaction of director protections and shareholder lawsuits changes the significance of the variables in the model, it is only appropriate to interpret their effects in the presence of the interaction. In Model 3, the coefficient of shareholder lawsuits was negative and significant ($p<.05$) and the coefficient of director protections was positive and marginally significant ($p<.10$), and the interaction coefficient was positive and significant ($p<.05$). Figure 8 uses the coefficients from Model 3 to graph the

interactive effect sizes of director protections and shareholder lawsuits on board-level human capital. The *y* axis on Figure 8 indicates the change in the overall level of the human capital variable based on changes in the predictor variables. For changes in director protections, fewer protections is equal to $\mu - \sigma$, where μ and σ are the mean and standard deviation of director protections; more protections is equal to $\mu + \sigma$. Because shareholder lawsuits is a count variable I used 0 and more than one. I tested and the difference between more and fewer protections with no lawsuits in the prior year is marginally significant ($p<0.10$), but the difference between more and fewer protections with one or more lawsuits is significant ($p<0.01$). What this means is that when the firm has had no lawsuits in the prior year there is no difference between having fewer director protections (measured as 1 sd below the mean) and more director protections (measured as 1 sd above the mean) on the level of human capital on the board. However, in the presence of one or more lawsuits, having more director protections is extremely valuable. In fact, rather than simply limiting a negative impact of lawsuits, it actually appears to increase a firm's level of human capital on the board.

Discussion and Conclusion

The findings of this study extend prior research on corporate governance and boards of directors in three important ways. First, I theorized and found support for the idea that actively working to increase the structural independence of the board may actually lower the human and social capital of the board. This extends theory on corporate governance by demonstrating that firms that attempt to apply agency theory prescriptions in isolation may suffer from unintended results. Second, I argued and found

that certain factors that may increase the workload, scrutiny, and risk that directors are under may lead to lower aggregate human capital of the board. This extends theory on corporate governance by drawing on a human resource perspective of corporate leaders to show that a consideration of director's interests is important to understanding the consequences of corporate governance practices. Finally, I hypothesized and found that the negative effect of shareholder lawsuits may be moderated by greater director protections. This extends theory on corporate governance by demonstrating that although directors express concerns about the risks of serving on boards, the practical effects of such risks can be alleviated through the use of specific corporate policies.

CONTRIBUTIONS TO THEORY

The theory developed here makes a contribution to research on corporate governance by exploring some of the unintended consequences of normative corporate governance prescriptions when these prescriptions are implemented by firms. I found support for the prediction that a greater proportion of outsiders on the board would lead to lower levels of human and social capital. This finding supports my argument that actively working to increase board independence may have side effects that are not considered by traditional work that uses normative agency theory and/or board power perspectives. This paper explicitly considers one such side effect, lower levels of human and social capital on boards. Directors are not immune to increasing workloads, pressures, and risk, and may react to these factors by limiting the availability of their services. This should be especially true of the most qualified directors who have the most options, and also the most to lose. Prior research on corporate governance often implicitly

assumes that changes to the corporate governance profile of a firm through increased independence, and other proposed reforms will only have one effect, that of improving monitoring. However, this research has failed to consider how governance reforms will affect the interests of directors. This is a major oversight. Without considering the effects of corporate governance reforms on the actors who are expected to implement them, these models are likely to generate very different results in practice than they do in theory.

Structural independence was the only hypothesized factor that had a negative impact on both the human and social capital of the board. One potential explanation for this result is that the outsider ratio of the board is the single most salient characteristic of a board of directors. Board independence is the characteristic that is most widely discussed in the media and among institutional players. This also means that it should be the characteristic that is most likely to be noticed and considered by directors when considering a board appointment. It is also interesting to consider another potential impact of the outsider ratio. Directors expressed a desire to serve because of the potential learning benefits. More outsiders on the board may provide a greater learning opportunity for directors because they will be in contact with a more diverse group of directors. This would lead to more outsiders on the board being a positive signal to new director candidates. However, based on the results presented here, even if directors perceive some learning benefit from having more outsiders on the board, the negative signal of increased workload appears to outweigh any positive signals.

It must be noted, that in general, the results in this study are much stronger when human capital is used as the dependent variable compared with when social capital is the

dependent variable. The only hypothesis that is supported with regards to lower social capital is the proportion of outsiders on the board. Social capital is a difficult construct to measure accurately, and some of the weakness of the results may be due to inaccuracy in the measure. Directors with high levels of social capital may feel that they have more power and influence, and therefore may feel more immune to the effect of lawsuits, or less obligated to follow the norms on any particular board. Therefore, indicators of increased workload, risk, or scrutiny may be less important to them. In fact, there is evidence that directors with many board appointments have more autonomy and face weaker social controls (Westphal & Khanna, 2003). In addition, it is interesting to note that shareholder lawsuits in the prior year actually increased the level of social capital on the board in the next year. This was opposite of what the hypothesis predicted. If the company has been sued, the current board may feel strongly that they need to protect themselves. So potentially, firms who have been sued may encourage directors with low social capital to leave in order to boost the power and status of the board. In addition, the firm may also recruit directors more on the basis of social capital than human capital. Because a lawsuit threatens the legitimacy of the firm, the role of directors in bolstering firm legitimacy becomes more salient, and firms will work harder to recruit directors with high levels of social capital to bolster that legitimacy. In addition, research suggests that managers may vary greatly in how cognizant they are regarding their level of social capital (Krackhardt, 1990). Therefore, directors may be less mindful of dangers or risks to their social capital.

Another contribution of this paper is that it uses both agency theory and human resource perspectives to explore the phenomenon of boards of directors. Too often

theorizing in this area draws from only one perspective. In this study I draw upon a human resource perspective to argue that firms that place higher workloads and demands on directors will find that high quality directors are less willing to sit on their boards. This is one of the first empirical studies to adopt a human resource perspective on boards. This paper continues the recent trend of interdisciplinary theorizing to examine boards of directors and their impact on the firm (Carpenter & Westphal, 2001; Hillman & Dalziel, 2003; Westphal, 1999).

This paper also makes a contribution by exploring some possible determinants of board composition. Most governance research merely examines the effects of the composition of the board, while failing to consider the determinants of composition. This paper proposes a number of factors that may lead to lower levels of human and social capital on boards.

CONTRIBUTIONS AND IMPLICATIONS FOR MANAGEMENT PRACTICE

This paper has clear implications for management practice. The results presented here suggest that managers and other institutional actors need to take a hard look at some of the proposed fixes to corporate governance problems. If the end result of these fixes is lower quality boards, then the problem will still exist, just in a different form or for different reasons. If boards end up with very active and independent directors who have little management experience and therefore cannot effectively monitor executive action, then the agency problem has not properly been addressed. In addition, if increased scrutiny and risk make qualified directors unwilling to serve, then the end result is still boards that are not as effective as possible. This paper hopes to show that individuals and

groups pushing for board reform need to consider multiple aspects of how these proposed reforms may affect boards.

One potential reaction to this paper may be to simply increase the benefits associated with being a director, possibly through pay and other perquisites. If the costs of being a director are increasing, one way to combat this is to increase the benefits to directors, which should counteract the negative downside risks. However, it must be noted that in this study higher total compensation was not significantly related to greater levels of human or social capital on the board. Greater proportions of option pay and higher levels of ownership were related to more human capital on the board. What this suggests is that pay in general may not be very helpful in recruiting and retaining directors with high levels of human capital, but what is important is how much the directors are truly linked to the firm in terms of ownership and contingent pay. However, drastically increasing director ownership levels or the proportion of option pay could also be impractical both from a public relations perspective as well as financially. Executive pay levels are already high and face a large amount of scrutiny. Increasing director ownership levels and stock option compensation might be unpalatable to the financial press. Another option is to create director compensation packages that are more flexible and better structured to the preferences of individual directors. Board compensation is currently very uniform across directors, with the only variance coming from additional compensation for committee memberships. As evidenced above, directors provide a wide array of motivations for serving on boards, so perhaps compensation packages could be structured to more fully address this variety.

Another potential action in response to this paper would be for firms to look for

alternative ways to improve their governance practices that reduce the load put on outside directors. Directors that I spoke with provided a number of different ideas of their own such as a suggestion to give directors their own independent staff in order to help combat the information gap between directors and managers. However, the costs and benefits of this approach are unknown. The expense of giving directors an independent staff may well outweigh any possible benefits.

Another implication of this research is that boards might need to do a better job of promoting the benefits of board service to potential recruits. This study illustrates that the costs of board service appear to be salient to directors. Perhaps nomination committees need to do a better job when they are recruiting director candidates of also showing the benefits of board service.

DIRECTIONS FOR FUTURE RESEARCH

There are a number of areas of future research suggested by this paper. Future research could examine more in depth the motivation of directors for serving. Much of the work in this area has not examined empirically why directors choose to serve on boards and how that affects their service. In fact, most of the insight into why directors choose to serve comes from qualitative discussions with directors. It would be useful to have a more systematic examination of director motivations. This paper tests only one set of factors that may impact directors' choices regarding board service. Future research could explore a broader range of factors that would both increase and decrease directors likelihood of accepting board appointments. One potentially rich area for future research would be to directly assess director perceptions about the attractiveness of board service

using a large-sample survey. This would provide direct evidence about how changes in certain characteristics of the board are actually impacting director perceptions and their subsequent willingness to serve. In fact, one of the limitations of this study is that I did not directly measure directors reasons for declining board positions, but that I only measured the effect of certain practices on board-level characteristics.

The background of this study is the changing institutional environment for directors. The institutional environment is one of increasing pressure, scrutiny, and risk for directors. What this study considers is how this broad general pressure may be manifested in various corporate governance practices and what is tested explicitly is how differences in these practices across firms affect companies' ability to recruit and retain directors with high levels of human and social capital. This study only indirectly considers how increased pressure on directors in the institutional environment might influence director quality. Future research could explore the direct effects of changes in the institutional environment. For instance, future research could examine changes in the institutional environment such as new legislation, court decisions, and the decisions of regulatory bodies like the SEC and the stock exchanges directly affect the overall level of director quality available in the market. Another area of future research would be to explore the moderating effect of changes in the institutional environment on director quality. For instance, new legislation and recent court decisions may increase the effect of some of the variables in this study. Legislation like the Sarbanes-Oxley act may make having an outsider-dominated board, or a high level of blockholder ownership even stronger signals to directors about the level of work expected and scrutiny they can expect from their board service.

This study is one of the few papers that examine determinants of the composition of the board. This is a very rich area for future research. Besides what factors a potential director may consider when sitting on a board, researchers should examine what factors make a potential director candidate attractive. This study makes the argument that directors' level of human and social capital should be valuable. However, there are other aspects of a director's reputation that may also be important, including directors associations with firms who experience highly visible and negative outcomes such as earnings restatements (Arthaud-Day et al., Forthcoming). As mentioned above, Fama and Jensen (1983) argued that a market for directors exists, but there has been very little empirical or theoretical treatment regarding how that market may operate. Future research could explore in detail what affects directors' reputations.

In addition to the characteristics of directors that lead to their board appointment, more research is needed into the actual board appointment process. Most of what we understand about how directors are recruited and selected comes from qualitative sources, and is dated (Lorsch & MacIver, 1989; Mace, 1986). Future research could examine the process used by boards to identify director candidates and also the process then used to recruit and retain these candidates.

One of the limitations of this study is that I did not directly assess the performance impact of having lower human and social capital on the board. There is evidence in other domains that human capital is useful for individuals (Carpenter & Wade, 2002; Gerhart & Milkovich, 1990) and can lead to higher firm performance (Bruderl et al., 1992; Hitt et al., 2001), but in this study it is merely assumed that having lower human and/or social capital on the board will be potentially negative for the firm.

Future research could more directly assess this assumption. It is possible that lower human and/or social capital could be overcome by having directors who are more motivated and spend more time.

Another potential limitation of this study is that due to the nature of some of the measures it is impossible to rule out some alternative explanations for the results. For instance, the negative effect of the outsider ratio on human capital could be the result of the fact that boards that add more outsiders may not be as able to be as choosy when filling additional outside director slots. So rather than the lower human capital being a result of directors conscious choice to avoid the firm, it is instead the result of the firm's inability to find directors who are qualified. In practice, however, this explanation still fits the larger purpose of this study which is to show that increases to structural independence may not have the effect intended by agency theorists.

CONCLUSION

Actions often have consequences that are not intended. Recent actions pushing for increased director independence and involvement appear to be no exception. Well intentioned researchers and governance activists have pursued an agenda to improve corporate governance by creating advocate directors, but they appear to have forgotten one important element, the impact of these changes on director attitudes. In addition, corporate governance reform appears to suffer from the failure to consider the results of current research. Not only may increased board independence have no relationship with firm performance (Dalton et al., 1998), it may actually weaken corporate governance in general by reducing the overall quality and ability of boards.

OVERALL CONCLUSION

The purpose of this dissertation was to better understand boards of directors. In order to do this I first developed a model of board effectiveness that established the importance of director capabilities. Specifically, I drew upon the literatures of human and social capital to explain how structurally equivalent boards may be quite different in terms of their effectiveness. In the second study of this dissertation I decided to focus on how factors that increase the workload, scrutiny, and risk of directors influence the selection and retention of those capabilities at the board level. Prior literature has addressed proposed certain types of board structures, but has failed to consider how these changes may affect directors' interests. By showing that factors such as a greater proportion of outsiders and higher levels of blockholder ownership that have been proposed to increase the effectiveness of the board may also increase the costs of being a director and therefore lower the level of human and social capital on boards, the second study of this dissertation reveals that many proposed corporate governance reforms may be indirectly harming board effectiveness.

TABLES AND FIGURES

Figure 1: Model of Board Effectiveness

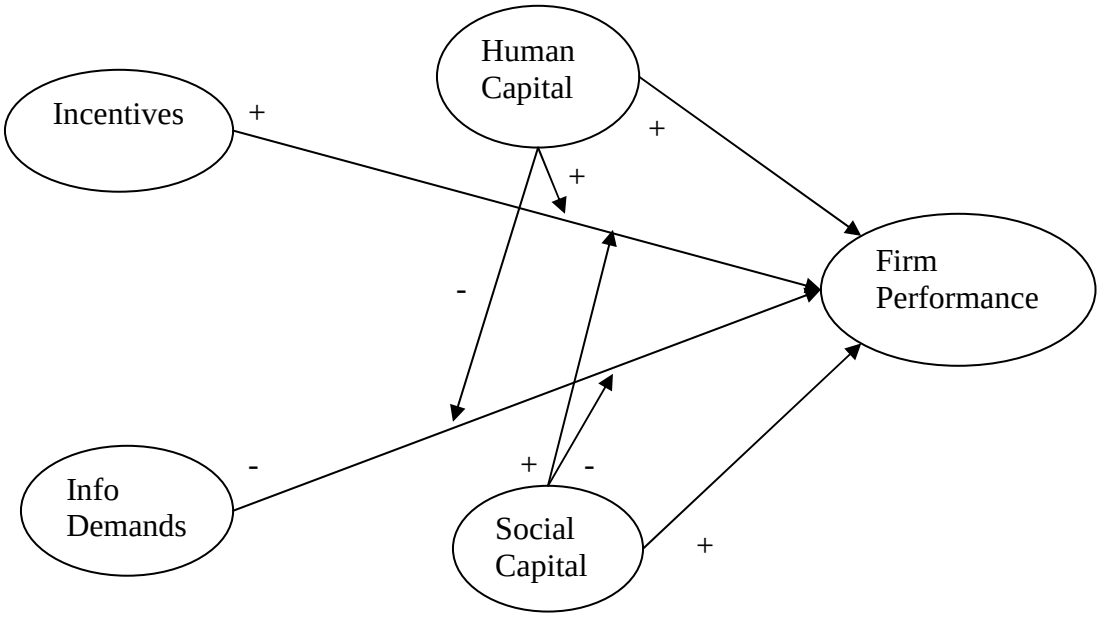


Table 1: Means, Standard Deviations, and Correlations of Key Variables (N=1,817) for Study One

Variable	Mean	S.D.	1	2	3	4	5	6
1. ROE	0.06	1.04						
2. Mkt to Book	-0.06	71.84	0.00					
3. Director Pay*	11.29	1.04	0.07	-0.03				
4. % Option Pay	0.31	0.31	0.02	0.00	0.43			
5. Dir Ownership	0.01	0.01	0.00	-0.02	-0.13	0.04		
6. Dir Education	139.82	49.65	0.03	-0.01	0.15	-0.13	-0.28	
7. Dir TMT Exp	84.06	45.70	0.04	0.01	0.09	-0.13	-0.25	0.74
8. Perf. Of Dir Home Companies	0.63	3.45	0.01	-0.01	0.03	0.02	-0.05	0.04
9. Director Tenure	67.02	35.85	0.03	-0.03	0.04	-0.10	-0.09	0.58
10. Product Market Similarity	0.01	0.03	0.00	0.01	0.05	0.11	-0.01	-0.10
11. Foreign Market Similarity	0.14	0.13	0.01	0.00	0.15	0.00	-0.15	0.18
12. Diversification Similarity	0.33	0.31	0.00	0.02	-0.05	0.14	0.11	-0.21
13.DOI Similarity	0.41	0.34	0.03	0.02	-0.13	-0.09	0.13	-0.04
14. Board Ties	7.11	5.90	0.00	0.01	0.19	-0.09	-0.24	0.61
15. Perf. of Dir other Appointments	1.23	6.58	-0.01	0.00	0.01	-0.02	-0.03	0.04
16. Social Clubs	1.57	3.01	0.06	-0.01	0.07	-0.09	-0.08	0.27
17. Size of Dir. Home Firm	2.35	1.66	0.03	0.00	0.13	0.00	-0.23	0.21
18. Businesses of Dir. Home Firm	0.83	0.67	0.03	0.03	0.11	-0.04	-0.22	0.15
19. Size of Dir. other Appointments	3.55	2.22	0.02	0.01	0.19	-0.05	-0.22	0.36
20. Businesses of Dir. Appointments	1.13	0.77	0.02	0.02	0.15	-0.08	-0.20	0.32
21. Firm Size*	8.46	1.09	0.00	0.00	0.23	-0.06	-0.14	0.48
22. Concentration Ratio Change	0.01	0.03	0.01	0.00	0.00	0.04	0.03	-0.07
23. Outsider %	0.80	0.13	-0.02	-0.02	0.17	-0.04	-0.30	0.57
24. Blockholder %	0.17	0.14	-0.09	0.02	-0.03	-0.02	0.03	-0.18
25. Institutional %	0.64	0.18	0.00	0.02	0.17	0.17	-0.22	-0.10
26. Board Size	10.53	2.83	0.04	-0.01	0.06	-0.15	-0.18	0.86
27. CEO Cont. Pay	0.55	0.27	-0.01	0.00	0.20	0.14	-0.22	0.23
28. Appointments after CEO	3.85	3.65	0.04	0.02	-0.05	-0.01	0.02	0.20
29. CEO is Chair	0.72	0.45	0.08	-0.02	0.05	-0.07	-0.10	0.16
30. Education Diversity	0.16	0.05	-0.01	-0.01	-0.09	0.04	0.10	-0.14
31. Age Diversity	0.12	0.04	0.00	-0.03	-0.14	0.01	0.24	-0.20

* variable is log transformed

(continued on next page)

Table 1 *(continued from previous page)*

Variable	7	8	9	10	11	12	13	14	15	16
8. Perf. Of Dir Home Companies	0.05									
9. Director Tenure	0.48	0.01								
10. Product Market Similarity	-0.09	-0.02	-0.06							
11. Foreign Market Similarity	0.17	0.06	0.00	0.10						
12. Diversification Similarity	-0.16	0.01	-0.17	0.04	-0.25					
13.DOI Similarity	-0.02	-0.06	0.08	-0.06	-0.49	0.15				
14. Board Ties	0.56	0.09	0.27	-0.06	0.50	-0.21	-0.17			
15. Perf. of Dir other Appointments	0.03	0.06	0.03	-0.04	0.04	-0.03	-0.04	0.07		
16. Social Clubs	0.27	0.03	0.22	-0.06	0.14	-0.14	-0.01	0.28	0.00	
17. Size of Dir. Home Firm	0.35	0.15	-0.04	-0.02	0.41	-0.08	-0.25	0.46	0.05	0.11
18. Businesses of Dir. Home Firm	0.31	0.10	-0.03	-0.01	0.40	-0.09	-0.24	0.34	0.02	0.11
19. Size of Dir. other Appointments	0.34	0.10	0.08	0.01	0.57	-0.23	-0.23	0.81	0.06	0.20
20. Businesses of Dir. Appointments	0.31	0.09	0.08	0.04	0.53	-0.29	-0.21	0.72	0.03	0.20
21. Firm Size*	0.37	0.03	0.22	-0.09	0.26	-0.16	-0.09	0.58	0.04	0.19
22. Concentration Ratio Change	-0.07	-0.03	-0.07	0.01	0.08	-0.02	-0.08	0.01	0.04	0.00
23. Outsider %	0.44	0.05	0.32	-0.04	0.17	-0.15	-0.10	0.36	0.06	0.14
24. Blockholder %	-0.16	-0.02	-0.13	0.04	0.02	0.05	-0.03	-0.08	0.02	-0.04
25. Institutional %	-0.11	0.03	-0.12	0.04	0.10	0.02	-0.14	0.03	0.00	-0.03
26. Board Size	0.65	0.01	0.58	-0.09	0.07	-0.15	0.05	0.49	0.02	0.24
27. CEO Cont. Pay	0.21	0.07	0.06	0.01	0.19	-0.05	-0.16	0.23	0.01	0.11
28. Appointments after CEO	0.13	-0.04	0.03	0.00	-0.13	0.03	0.13	0.01	-0.01	0.05
29. CEO is Chair	0.11	0.00	0.01	-0.06	0.10	-0.12	-0.01	0.18	0.04	0.08
30. Education Diversity	-0.14	-0.06	0.08	0.02	-0.20	0.10	0.18	-0.21	-0.05	-0.08
31. Age Diversity	-0.22	-0.01	-0.04	0.01	-0.17	0.09	0.09	-0.24	-0.02	-0.06

(continued on next page)

Table 1 *(continued from previous page)*

Variable	17	18	19	20	21	22	23	24	25	26
18. Businesses of Dir. Home Firm	0.81									
19. Size of Dir. other Appointments	0.48	0.38								
20. Businesses of Dir. Appointments	0.42	0.34	0.86							
21. Firm Size*	0.25	0.15	0.50	0.41						
22. Concentration Ratio Change	0.05	0.05	0.03	0.02	-0.02					
23. Outsider %	0.24	0.19	0.22	0.21	0.19	-0.05				
24. Blockholder %	0.01	0.01	-0.02	-0.02	-0.19	0.03	-0.03			
25. Institutional %	0.16	0.13	0.11	0.09	0.01	0.03	0.07	0.28		
26. Board Size	0.08	0.04	0.24	0.21	0.44	-0.07	0.20	-0.20	-0.19	
27. CEO Cont. Pay	0.24	0.20	0.23	0.18	0.22	-0.01	0.16	-0.04	0.16	0.15
28. Appointments after CEO	-0.11	-0.10	-0.07	-0.07	0.06	-0.01	-0.04	-0.06	-0.10	0.30
29. CEO is Chair	0.06	0.04	0.18	0.14	0.10	-0.04	0.18	-0.03	0.04	0.03
30. Education Diversity	-0.24	-0.22	-0.26	-0.28	-0.11	-0.02	-0.10	-0.06	-0.06	0.00
31. Age Diversity	-0.17	-0.18	-0.27	-0.24	-0.15	0.01	-0.20	0.13	0.01	-0.09

Variable	27	28	29	30
28. Appointments after CEO	-0.04			
29. CEO is Chair	0.02	0.22		
30. Education Diversity	-0.12	0.07	-0.03	
31. Age Diversity	-0.09	0.05	-0.18	0.06

Table 2: Analysis of Study One effects on Return on Equity

GLS analysis[•]

	Predicted Effect	DV = Return on Equity (1)	(2)	(3)	(4)
Intercept		-0.829**	-0.316	1.039	0.842
		(0.252)	(0.288)	(0.241)	(0.202)
Director Pay	H1a (+)		-0.010		
			(0.012)		
Director Option Pay	H1b (+)		0.004		
			(0.069)		
Director Ownership	H1c (+)		2.939†		
			(1.755)		
Dummy for Est Value of Options			0.064		
			(0.089)		
Director Incentives Composite	H1 (+)			-0.016†	-0.021**
				(0.009)	(0.007)
Director Education	H2a (+)		0.000		
			(0.001)		
Director TMT Experience	H2b (+)		0.002*		
			(0.001)		
Dummy for Estimated Director Data			0.125**		
			(0.037)		
Perf. Of Directors' Home Companies	H2c (+)		0.053***		
			(0.002)		
Director Tenure	H2d (+)		0.000		
			(0.001)		
Product Market Similarity of Directors' other Boards	H2e (+)		0.437		
			(0.424)		
Foreign Market Similarity of Directors' other Boards	H2e (+)		0.581**		
			(0.209)		
Diversification Similarity of Directors' other Boards	H2e (+)		0.058		
			(0.071)		
International Similarity of Directors' other Boards	H2e (+)		-0.046		
			(0.068)		
Human Capital Composite	H2 (+)			0.129***	0.119***
				(0.005)	(0.005)
Total Board Ties	H3a (+)		-0.024***		
			(0.007)		
Perf. of Directors' other Board Appointments	H3b (+)		-0.002		
			(0.002)		
Social Club Memberships	H3c (+)		0.013†		
			(0.007)		

(continued on next page)

Table 2

GLS analysis•

		DV = Return on Equity			
	Predicted Effect	**(1)**	**(2)**	**(3)**	**(4)**
Social Capital Composite	H3 (+)			-0.038***	-0.025*
				(0.011)	(0.011)
Size of Dir. Home Firm	H5a (-)		0.052**		
			(0.020)		
Number of Businesses of Dir. Home Firm	H5b (-)		-0.074*		
			(0.037)		
Size of Dir. other Board Appointments	H5c (-)		0.023		
			(0.020)		
Number of Businesses of Dir. other Board Appointments	H5d (-)		-0.103*		
			(0.042)		
Information Demands Composite	H5 (-)			-0.018**	-0.022**
				(0.007)	(0.006)
Incentives X Human Capital	H4a (+)				-0.017***
					(0.002)
Information Demands X Human Capital	H6a (-)				-0.010***
					(0.001)
Incentives X Social Capital	H4b (+)				0.023***
					(0.006)
Information Demands X Social Capital	H6b (-)				0.012***
					(0.003)
Prior Performance		1.163***	0.581***	0.743***	0.671***
		(0.067)	(0.073)	(0.065)	(0.057)
Firm Size		0.087***	0.038†	0.093***	0.072***
		(0.023)	(0.022)	(0.022)	(0.019)
Change in Industry Concentration Ratio		0.050	0.308	-0.908*	0.565
		(0.334)	(0.415)	(0.459)	(0.393)
Outsider %		1.220***	0.142	-0.580***	-0.442**
		(0.142)	(0.222)	(0.151)	(0.140)
Blockholder %		2.117***	0.388**	0.992***	1.108***
		(0.143)	(0.148)	(0.140)	(0.122)
Institutional %		-0.807***	-0.454***	-0.685***	-0.681***
		(0.164)	(0.128)	(0.136)	(0.128)
Board Size		-0.051***	-0.001	-0.103***	-0.083***
		(0.006)	(0.019)	(0.007)	(0.009)
CEO Cont. Pay		0.042	-0.010	0.033	0.172**
		(0.070)	(0.068)	(0.072)	(0.065)
Appointments after CEO		0.022***	0.000	-0.021***	-0.010†
		(0.006)	(0.005)	(0.006)	(0.006)

(continued on next page)

Table 2

GLS analysis[•]

	Predicted Effect	DV = Return on Equity (1)	(2)	(3)	(4)
CEO is Chair		-0.221***	-0.082†	-0.007	-0.142***
		(0.049)	(0.045)	(0.042)	(0.039)
Education Diversity		0.184	0.584	0.260	-0.536
		(0.424)	(0.366)	(0.405)	(0.327)
Age Diversity		-1.143†	-0.175	0.157	1.556**
		(0.646)	(0.509)	(0.524)	(0.512)
Log Likelihood		-2737.20	-2158.16	-2368.78	-2275.23
Δ fit			-579.0***	-368.4***	-93.55***

† p < .10; * p < .05; ** p < .01; *** p < .001; two-tailed tests.
• 620 firms and 1,817 firm-years observed.

Figure 2: The interactive effect of board-level human capital and incentives on Return on Equity

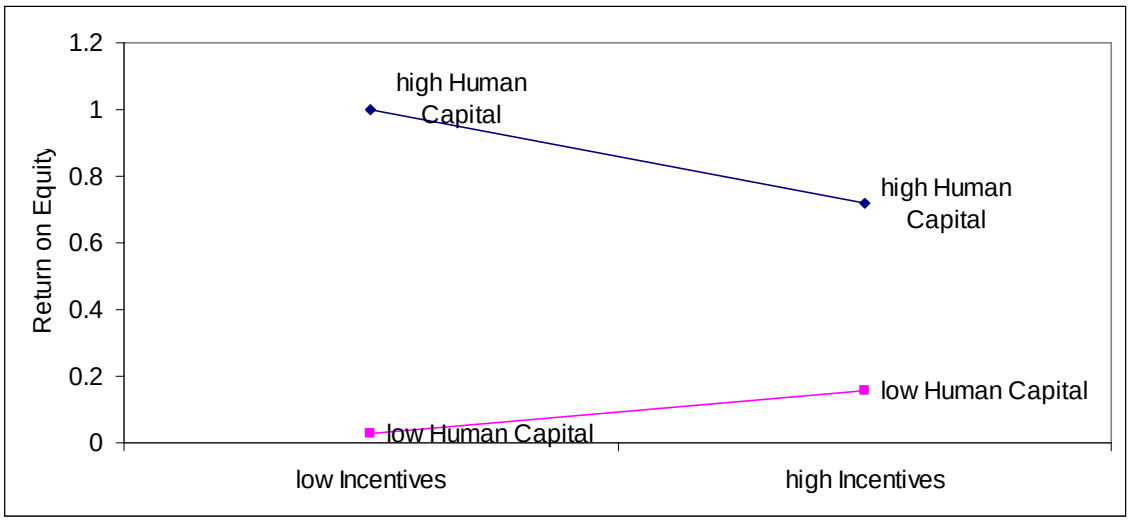


Figure 3: The interactive effect of board-level social capital and incentives on Return on Equity

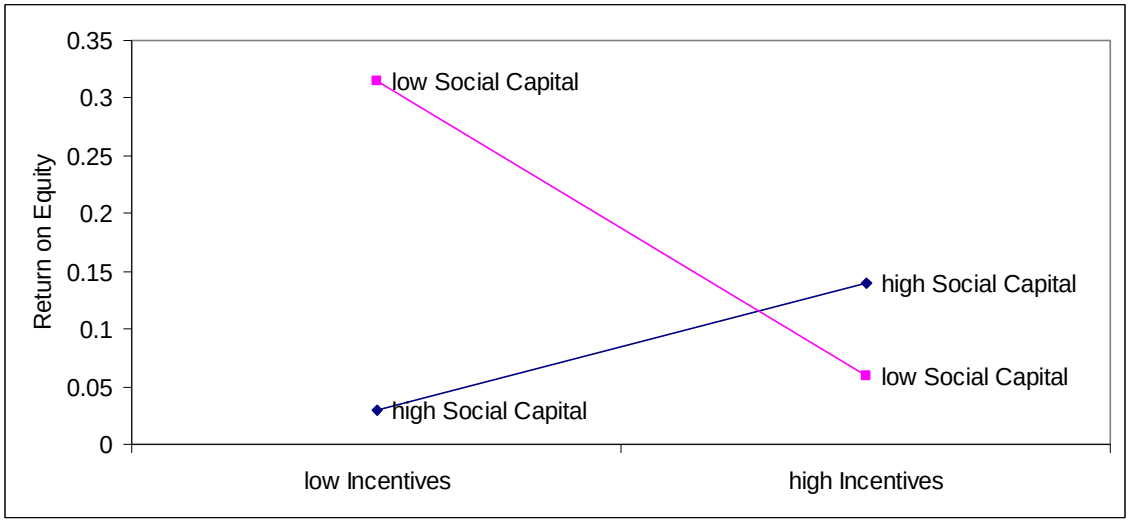


Figure 4: The interactive effect of board-level human capital and information demands on Return on Equity

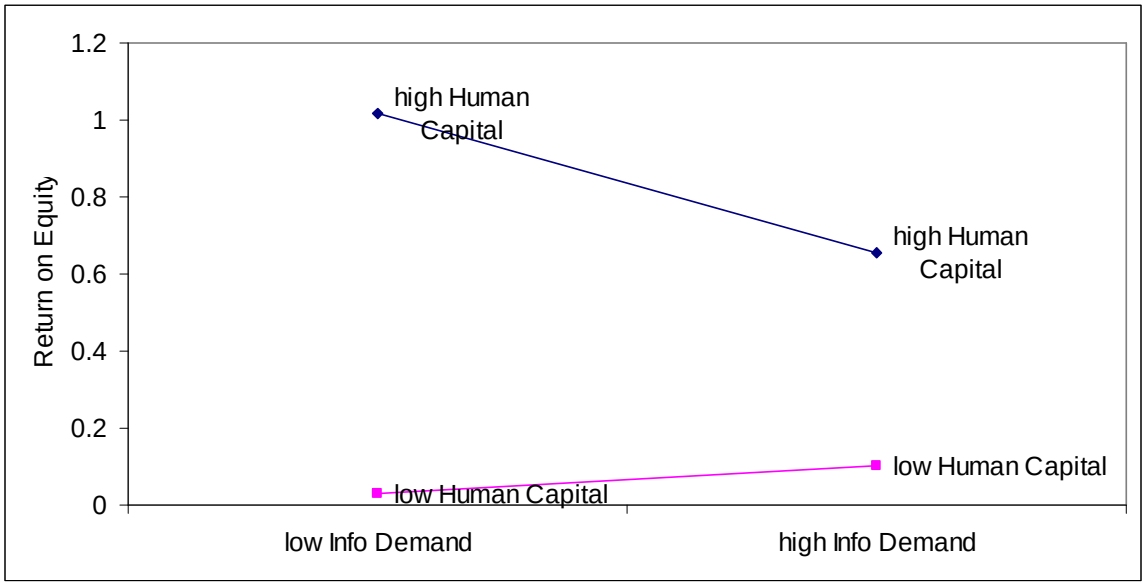


Figure 5: The interactive effect of board-level social capital and information demands on Return on Equity

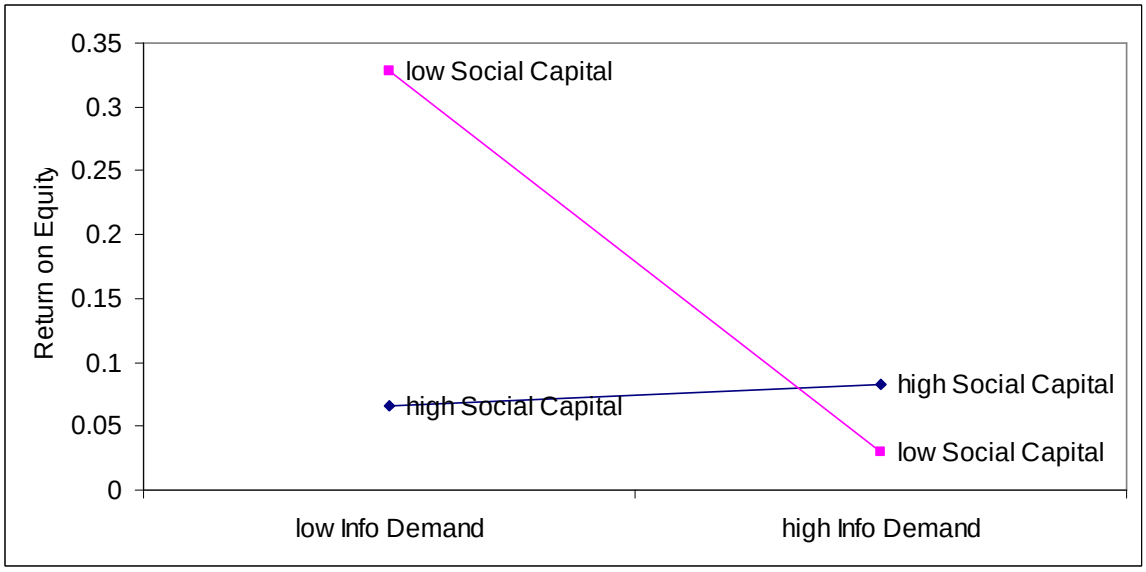


Table 3: Analysis of Study One effects on Market to Book Value

GLS analysis[•]

		DV = Market to Book Value			
	Predicted Effect	**(1)**	**(2)**	**(3)**	**(4)**
Intercept		27.520[*]	-22.829	18.152	6.157
		(11.086)	(24.720)	(14.975)	(14.420)
Director Pay	H1a (+)		3.895[***]		
			(1.666)		
Director Option Pay	H1b (+)		-4.747		
			(4.535)		
Director Ownership	H1c (+)		-220.13†		
			(132.149)		
Dummy for Est Value of Options			5.530		
			(3.562)		
Director Incentives Composite	H1 (+)			1.493[*]	0.583
				(0.665)	(0.822)
Director Education	H2a (+)		0.060		
			(0.077)		
Director TMT Experience	H2b (+)		-0.052		
			(0.045)		
Dummy for Estimated Director Data			-12.61[***]		
			(2.345)		
Perf. Of Directors' Home Companies	H2c (+)		-0.329		
			(0.253)		
Director Tenure	H2d (+)		0.034		
			(0.037)		
Product Market Similarity of Directors' other Boards	H2e (+)		19.821		
			(43.483)		
Foreign Market Similarity of Directors' other Boards	H2e (+)		-56.63[***]		
			(10.488)		
Diversification Similarity of Directors' other Boards	H2e (+)		7.611		
			(4.846)		
International Similarity of Directors' other Boards	H2e (+)		5.729		
			(3.937)		
Human Capital Composite	H2 (+)			-0.997†	-1.328[*]
				(0.542)	(0.556)
Total Board Ties	H3a (+)		-1.063[*]		
			(0.429)		
Perf. of Directors' other Board Appointments	H3b (+)		0.057		
			(0.180)		
Social Club Memberships	H3c (+)		-0.076		
			(0.483)		

(continued on next page)

Table 3

GLS analysis•

		DV = Return on Equity			
	Predicted Effect	**(1)**	**(2)**	**(3)**	**(4)**
Social Capital Composite	H3 (+)			-0.885	-1.877†
				(0.955)	(1.023)
Size of Dir. Home Firm	H5a (-)		-2.866*		
			(1.146)		
Number of Businesses of Dir. Home Firm	H5b (-)		13.169***		
			(2.430)		
Size of Dir. other Board Appointments	H5c (-)		-2.310†		
			(1.287)		
Number of Businesses of Dir. other Board Appointments	H5d (-)		15.301***		
			(2.395)		
Information Demands Composite	H5 (-)			-0.421	0.121
				(0.410)	(0.431)
Incentives X Human Capital	H4a (+)				-0.460*
					(0.193)
Information Demands X Human Capital	H6a (-)				-0.065
					(0.110)
Incentives X Social Capital	H4b (+)				0.115
					(0.567)
Information Demands X Social Capital	H6b (-)				0.734***
					(0.210)
Prior Performance		1.161***	1.111***	1.178***	1.182***
		(0.090)	(0.143)	(0.114)	(0.099)
Firm Size		-1.998	4.655**	-2.042	-0.944
		(1.077)	(1.357)	(1.315)	(1.398)
Change in Industry Concentration Ratio		1.628	-19.125	-9.694	-14.296
		(23.887)	(30.461)	(20.501)	(21.968)
Outsider %		-14.69***	-41.895**	3.878	11.223
		(6.643)	(15.091)	(7.732)	(6.833)
Blockholder %		-19.56***	20.562**	-15.038*	-12.935†
		(5.197)	(6.763)	(6.722)	(6.879)
Institutional %		17.385*	-5.270	3.903	0.123
		(7.394)	(8.523)	(7.316)	(6.435)
Board Size		2.614***	0.908	3.046***	2.490**
		(0.495)	(1.072)	(0.714)	(0.729)
CEO Cont. Pay		-28.75***	-33.12***	-24.78***	-19.45***
		(2.202)	(3.346)	(2.279)	(2.311)
Appointments after CEO		-0.490*	-1.136**	-0.976***	-0.767**
		(0.223)	(0.342)	(0.251)	(0.273)

(continued on next page)

Table 3

GLS analysis•

	Predicted Effect	DV = Return on Equity (1)	(2)	(3)	(4)
CEO is Chair		-3.448	0.007	-2.142	-1.706
		(2.939)	(2.969)	(2.594)	(2.660)
Education Diversity		48.234*	-51.366†	19.794	-11.095
		(19.664)	(27.840)	(27.146)	(20.747)
Age Diversity		-191.8***	-61.177†	-164.7***	-133.8***
		(21.550)	(35.543)	(24.284)	(25.922)
Log Likelihood		-10245.2	-10369.3	-10226.2	-10242.8
Δ fit			124.1	-19.0***	-16.6***

† p < .10; * p < .05; ** p < .01; *** p < .001; two-tailed tests.
• 620 firms and 1,817 firm-years observed.

Figure 6: The interactive effect of board-level human capital and incentives on market to book value

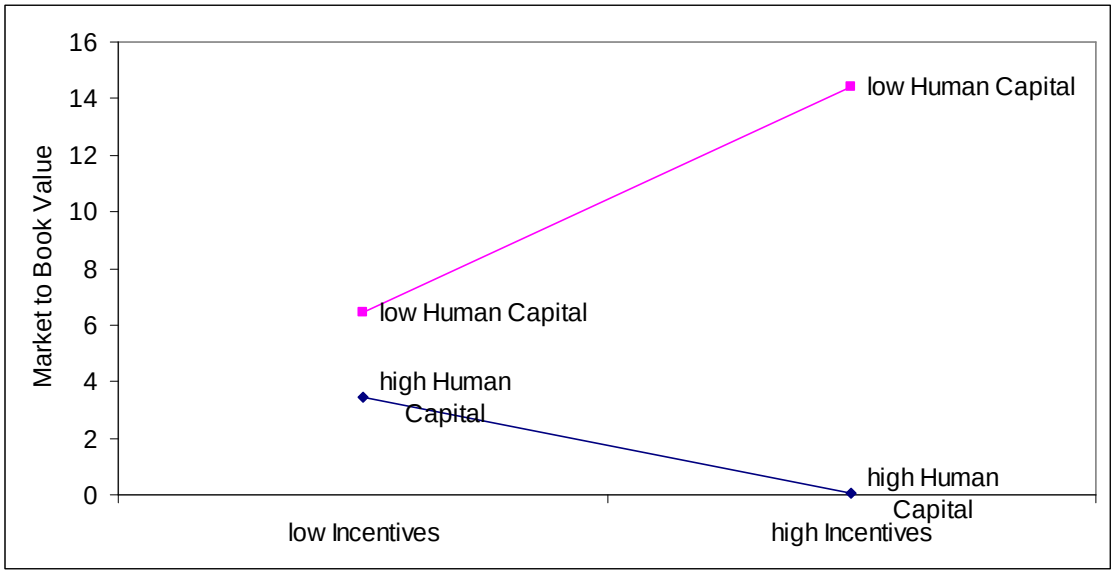


Figure 7: The interactive effect of board-level social capital and information demands on market to book value

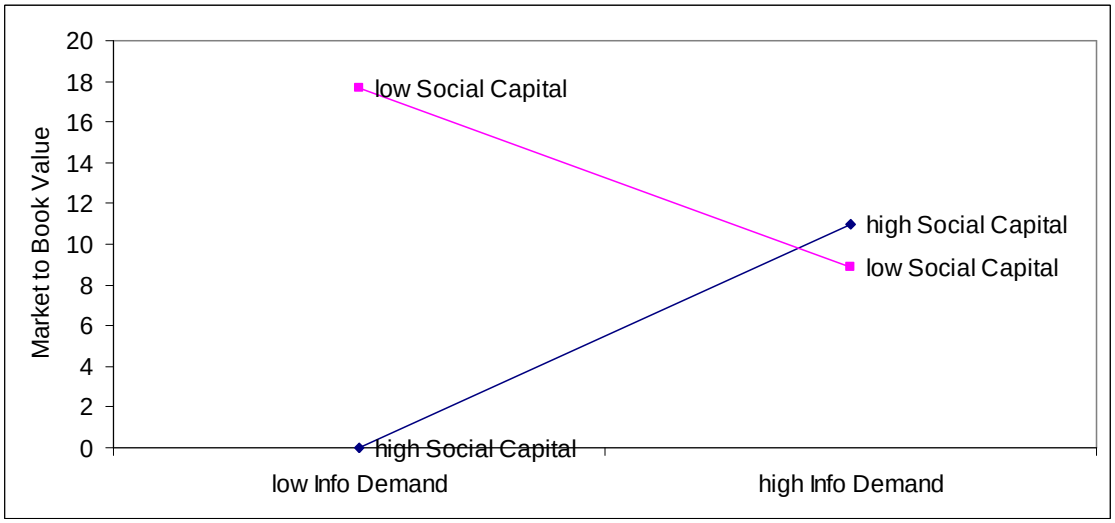


Table 4: Means, Standard Deviations, and Correlations of Key Variables for Study Two (*N*=1,875)

Variable	Mean	S.D.	1	2	3	4	5	6
1. Human Capital	0.00	3.16						
2. Social Capital	0.03	1.90	.32					
3. Board Structure	0.81	0.12	.25	.20				
4. Blockholder %	0.17	0.14	-.15	-.06	-.02			
5. Institutional %	0.65	0.18	-.10	.02	.07	.29		
6. Unrelated Divers.	0.21	0.34	-.13	.07	.09	-.03	.01	
7. Shareholder lawsuits	0.04	0.21	.03	.06	.00	-.05	.01	-.03
8. Dir Protections	4.81	1.59	.08	.07	.26	-.01	.08	.17
9. Director Pay*	11.30	1.07	.09	.14	.16	-.03	.16	.07
10. % Option Pay	0.31	0.31	-.05	-.07	-.04	-.01	.18	-.05
11. Dir Ownership	0.00	0.01	-.13	-.16	-.30	.01	-.23	-.08
12. ROA	0.03	0.12	.13	.05	-.01	-.06	.05	.01
13. Firm Size*	8.48	1.08	.30	.43	.19	-.19	.01	.07
14. Board Size	10.49	2.84	.56	.36	.19	-.20	-.18	.06
15. CEO Cont. Pay	0.55	0.27	.13	.21	.16	-.04	.16	-.02
16. Appointments after CEO	4.05	3.79	.11	.01	-.04	-.07	-.10	-.02
17. CEO is Chair	0.72	0.45	.04	.12	.17	-.03	.05	.08
18. Age Diversity	0.12	0.04	-.12	-.16	-.19	.14	.01	-.06

* variable is log transformed

Variable	7	8	9	10	11	12	13	14	15	16
8. Dir Protections	-.01									
9. Director Pay*	-.02	.08								
10. % Option Pay	.01	-.05	.43							
11. Dir Ownership	-.01	-.22	-.12	.04						
12. ROA	-.01	.02	.02	-.03	.02					
13. Firm Size*	.07	-.06	.25	-.06	-.14	.08				
14. Board Size	.06	.09	.06	-.14	-.18	.06	.44			
15. CEO Cont. Pay	.03	.07	.20	.14	-.23	-.06	.22	.15		
16. Appointments after CEO	.04	-.09	-.03	-.01	.02	.05	.07	.30	-.04	
17. CEO is Chair	.01	.10	.05	-.07	-.11	.06	.11	.03	.02	.23
18. Age Diversity	-.01	-.17	-.14	.01	.22	-.01	-.15	-.09	-.09	.05

Variable	17
18. Age Diversity	-.17

Table 5: Analysis of Study Two Effects on Human/Social Capital

GLS analysis[•]

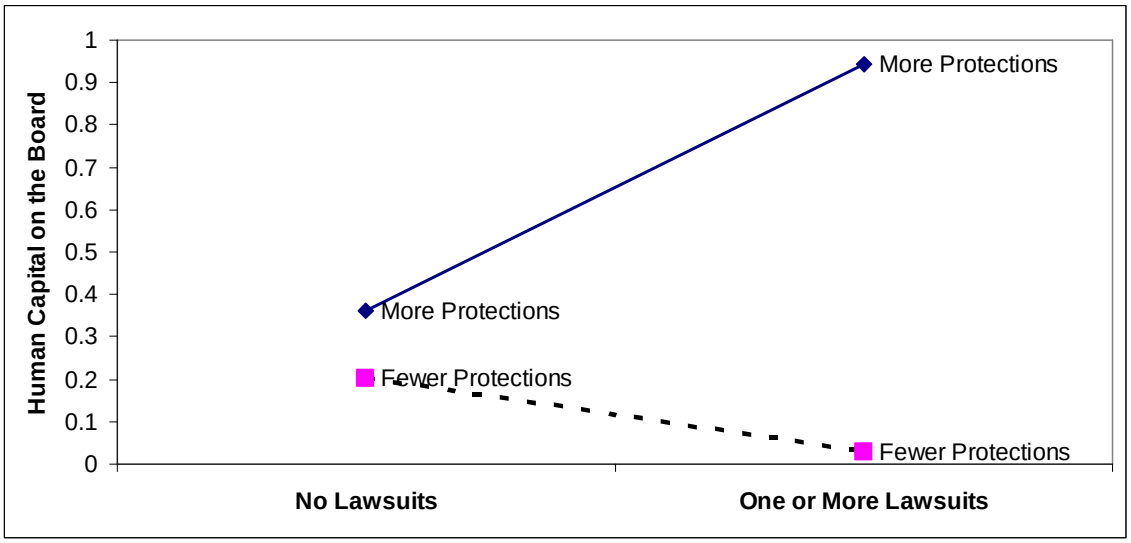
		DV = Human Capital			DV = Social Capital		
	Predicted effect	Models (1)	(2)	(3)	(4)	(5)	(6)
Intercept		-0.892	4.642***	4.583***	-2.168**	7.466***	7.416***
		(0.590)	(1.073)	(1.075)	(0.766)	(1.685)	(1.683)
Board Structure	H1 (-)		-4.466***	-4.318***		-3.407***	-3.406***
			(0.574)	(0.576)		(0.465)	(0.465)
Blockholder %	H2 (-)		-0.815**	-0.862**		-0.560†	-0.559†
			(0.304)	(0.303)		(0.288)	(0.288)
Dummy for Blockholder estimates			0.018	0.069		0.048	0.041
			(0.284)	(0.284)		(0.221)	(0.221)
Institutional %	H3 (-)		-0.052	-0.059		-0.009	-0.007
			(0.259)	(0.260)		(0.224)	(0.224)
Shareholder lawsuits	H4 (-)		0.126	-0.935*		0.365**	0.575
			(0.184)	(0.437)		(0.140)	(0.407)
Dir Protections	H5 (+)		0.063*	0.051†		-0.007	-0.005
			(0.029)	(0.029)		(0.021)	(0.021)
Dummy for Backfilled Protections			-0.178	-0.165		-0.222	-0.227
			(0.256)	(0.256)		(0.141)	(0.141)
Protections X Lawsuits	H6 (+)			0.237*			-0.045
				(0.097)			(0.082)
Prior Human/Social Capital		0.635***	1.065***	1.049***	0.739***	1.900***	1.896***
		(0.036)	(0.067)	(0.068)	(0.094)	(0.201)	(0.201)
Director Pay		-0.046	-0.052	-0.057	0.012	0.014	0.015
		(0.042)	(0.044)	(0.043)	(0.035)	(0.036)	(0.036)
Option Pay		0.264†	0.326*	0.322*	-0.124	-0.194	-0.192
		(0.153)	(0.156)	(0.156)	(0.124)	(0.132)	(0.132)
Dir Ownership		9.577**	9.397*	9.235*	2.606	1.039	1.031
		(3.758)	(0.104)	(4.336)	(3.061)	(3.137)	(3.138)
Dummy for Est Option Value		-0.664***	-0.241**	-0.557**	-0.115	-0.078	-0.079
		(0.145)	(0.345)	(0.180)	(0.158)	(0.155)	(0.155)
ROA		0.932***	0.461**	0.479**	0.223	0.032	0.033
		(0.149)	(0.157)	(0.157)	(0.193)	(0.205)	(0.205)
Firm Size		0.148***	0.184***	0.180***	0.285***	-0.243*	-0.241*
		(0.043)	(0.049)	(0.049)	(0.060)	(0.104)	(0.104)
Unrelated Divers.		-0.441**	0.257	0.240	0.044	-0.012	-0.016
		(0.143)	(0.187)	(0.187)	(0.128)	(0.127)	(0.127)
Board Size		0.147***	-0.159**	-0.149**	0.003	-0.209***	-0.209***
		(0.033)	(0.051)	(0.052)	(0.022)	(0.041)	(0.041)

(continued on next page)

CEO Cont. Pay	-0.153	-0.029	-0.028	0.136	-0.358*	-0.356*
	(0.144)	(0.147)	(0.146)	(0.122)	(0.148)	(0.148)
Appointments	-0.023†	-0.008	-0.007	-0.006	0.034**	0.034**
after CEO	(0.012)	(0.013)	(0.013)	(0.010)	(0.012)	(0.012)
CEO is Chair	-0.058	-0.065	-0.072	-0.140†	-0.522***	-0.521***
	(0.092)	(0.095)	(0.095)	(0.083)	(0.103)	(0.103)
Age Diversity	-2.215*	-1.540	-1.577	-1.384†	1.815	1.803
	(0.935)	(0.993)	(0.992)	(0.723)	(0.969)	(0.969)
Log Likelihood	-3678.39	-3644.80	-3642.78	-3050.31	-3023.305	-3023.104
Δ fit		-33.59***	-2.02*		-27.01***	-0.201

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$; two-tailed tests.
• 627 firms and 1,868 firm-years observed.

Figure 8: The interactive effect of director protections and shareholder lawsuits on human capital



REFERENCES

2002. Companies face a record number of shareholder lawsuits, ***Investor Relations Business***, Vol. 7: 2.

Adler, P. S. & Kwon, S.-W. 2002. Social capital: prospects for a new concept. ***Academy of Management Review***, 27: 17-40.

Alexander, J. A., Fennell, M. L., & Halpern, M. T. 1993. Leadership instability in hospitals: the influence of board-CEO relations and organizational growth and decline. ***Administrative Science Quarterly***, 38: 74-99.

Allison, P. D. 1990. Change scores as dependent variables in regression analyses. In C. C. Clogg (Ed.), ***Sociological Methodology***, Vol. 93. Oxford: Basil Blackwell.

Ancona, D. G. & Caldwell, D. F. 1992. Demography and design: predictors of new product team performance. ***Organization Science***, 3: 321-341.

Antel, J. J. 1986. Human capital investment specialization and the wage effects of voluntary labor mobility. ***Review of Economics and Statistics***, 68: 477-483.

AP. 2006. Warren Buffett plans to leave Coca-Cola's board, ***New York Times***.

Arrow, K. J. 1951. Alternative approaches to the theory of choice in risk-taking situations. ***Econometrica***, 19: 404-437.

Arrow, K. J. 1958. Utilities, attitudes, choices: a review note. ***Econometrica***, 26: 1-23.

Arthaud-Day, M. L., Certo, S. T., Dalton, C. M., & Dalton, D. R. Forthcoming. A changing of the guard: executive and director turnover following corporate financial restatements. ***Academy of Management Journal***: 1-41.

Bantel, K. A. & Jackson, S. E. 1989. Top management and innovations in banking - does the composition of the top team make a difference? ***Strategic Management Journal***, 10: 107-124.

Barnard, J. W. 1991. Institutional investors and the new corporate governance. ***North Carolina Law Review***, 69: 1135-1187.

Barney, J. B. 1991. Firm resources and sustained competitive advantage. ***Journal of Management***, 17: 99-120.

Baysinger, B. & Hoskisson, R. E. 1990. The compositions of boards of directors and strategic control: effects on corporate strategy. ***Academy of Management Review***, 15: 72-87.

Beach, L. R. & Mitchell, T. R. 1978. A contingency model for the selection of decision strategies. ***Academy of Management Review***, 3: 439-449.

Beatty, R. P. & Zajac, E. J. 1994. Managerial incentives, monitoring, and risk bearing: a study of executive compensation, ownership, and board structure in initial public offerings. ***Administrative Science Quarterly***, 39: 313-335.

Beck, J. D. & Bhagat, S. 1997. Shareholder litigation: share price movements, news releases, and settlement amounts. ***Managerial and Decision Economics***, 18: 563-586.

Becker, G. S. 1962. Investment in human capital: a theoretical analysis. ***Journal of Political Economy***, 70: 9-49.

Beckman, C. M. & Haunschild, P. R. 2002. Network learning: the effects of partners' heterogeneity of experience on corporate acquisitions. ***Administrative Science Quarterly***, 47: 92-124.

Belliveau, M. A., O'Reilly, C. A., III, & Wade, J. B. 1996. Social capital at the top: effects of social similarity and status on CEO compensation. ***Academy of Management Journal***, 39: 1568-1593.

Berle, A. A. & Means, G. C. 1932. ***The Modern Corporation and Private Property***. New York: Macmillan.

Bethel, J. E. & Liebeskind, J. P. 1993. The effects of ownership structure on corporate restructuring. ***Strategic Management Journal***, 14: 15-31.

Bhagat, S. & Black, B. S. 2001. The non-correlation between board independence and long term firm performance. ***Journal of Corporation Law***, 27: 231-274.

Bhagat, S., Brickley, J. A., & Lease, R. C. 1985. Incentive effects of stock purchase plans. ***Journal of Financial Economics***, 14: 195-215.

Black, B. S. 1992. Agents watching agents: the promise of institutional investor voice. ***UCLA Law Review***, 39: 811-893.

Black, B. S., Cheffins, B., & Klausner, M. 2005. Liability risk for outside directors: a cross-border analysis. ***European Financial Management Journal***, 11: 153-171.

Boeker, W. 1992. Power and managerial dismissal: scapegoating at the top. ***Administrative Science Quarterly***, 37: 400-421.

Boeker, W. & Goodstein, J. 1993. Performance and successor choice: the moderating effects of governance and ownership. ***Academy of Management Journal***, 36: 172-186.

Boyd, B. K. 1994. Board control and CEO compensation. ***Strategic Management Journal***, 15: 335-344.

Brass, D. J. 1992. Power in organizations: A social network perspective. In G. Moore & J. A. Whitt (Eds.), ***Research in Politics and Society***: 295-323. Greenwich, CT: JAI Press.

Brass, D. J. & Burkhardt, M. E. 1992. Centrality and power in organizations. In N. Nohria & R. G. Eccles (Eds.), ***Networks and Organizations: Structure, Form and Action***: 191-214. Boston: Harvard Business School Press.

Bretz, R. D., Jr., Ash, R. A., & Dreher, G. F. 1989. Do people make the place? An examination of the attraction-selection-attrition hypothesis. ***Personnel Psychology***, 42: 561-581.

Brown, C. 1976. A model of optimal human-capital accumulation and the wages of young high school graduates. ***Journal of Political Economy***, 84: 299-316.

Bruderl, J., Preisendorfer, P., & Ziegler, R. 1992. Survival chances of newly founded business organizations. ***American Sociological Review***, 57: 227-242.

Buchholtz, A. K., Ribbens, B. A., & Houle, I. T. 2003. The role of human capital in postacquisition CEO departure. ***Academy of Management Journal***, 46: 506-514.

Burkart, M., Gromb, D., & Panunzi, F. 1997. Large shareholders, monitoring, and the value of the firm. ***Quarterly Journal of Economics***, 112: 693-728.

Burt, R. S. 1983. ***Corporate Profits and Cooptation: Networks of Market Constraints and Directorate Ties in the American Economy***. New York: Academic Press.

Burt, R. S. 1987. Social contagion and innovation: cohesion versus structural equivalence. ***American Journal of Sociology***, 92: 1287-1335.
Burt, R. S. 1992. ***Structural Holes: The Social Structure of Competition***. Cambridge, MA: Harvard University Press.
Burt, R. S. 1997. The contingent value of social capital. ***Administrative Science Quarterly***, 42: 339-365.
Burt, R. S. 2000. The network structure of social capital. In R. I. Sutton & B. M. Staw (Eds.), ***Research in Organizational Behavior***: 345-423. Greenwich, CT: JAI Press.
Cable, D. M. & Judge, T. A. 1996. Person-organization fit, job choice decisions, and organizational entry. ***Organizational Behavior and Human Decision Processes***, 67: 294-311.
Caldwell, D. F. & O'Reilly, C. A., III. 1985. The impact of information on job choices and turnover. ***Academy of Management Journal***, 28: 934-943.
Carpenter, M. A., Pollock, T. G., & Leary, M. M. 2003. Testing a model of reasoned risk-taking: governance, the experience of principals and agents, and global strategy in high-technology IPO firms. ***Strategic Management Journal***, 24: 803-820.
Carpenter, M. A., Sanders, W. G., & Gregersen, H. B. 2001. Bundling human capital with organizational context: the impact of international assignment experience on multinational firm performance and CEO pay. ***Academy of Management Journal***, 44: 493-511.
Carpenter, M. A. & Wade, J. B. 2002. Microlevel opportunity structures as determinants of non-CEO executive pay. ***Academy of Management Journal***, 45: 1085-1103.
Carpenter, M. A. & Westphal, J. D. 2001. The strategic context of external network ties: examining the impact of director appointments on board involvement in strategic decision making. ***Academy of Management Journal***, 4: 639-660.
Castanias, R. P. & Helfat, C. E. 1991. Managerial resources and rents. ***Journal of Management***, 17: 155-171.
Certo, S. T. 2003. Influencing initial public offering investors with prestige: signaling with board structures. ***Academy of Management Review***, 28: 432-446.
Chandler, A. D., Jr. 1962. ***Strategy and Structure: Chapters in the History of the American Industrial Enterprise***. Cambridge, MA: MIT Press.
Charan, R. 1998. ***Boards at Work: How Corporate Boards Create Competitive Advantage***. San Francisco, CA: Jossey-Bass.
Chatterjee, S., Harrison, J. S., & Bergh, D. D. 2003. Failed takeover attempts, corporate governance and refocusing. ***Strategic Management Journal***, 24: 87-96.
Chi, M. T. H., Glaser, R., & Rees, E. 1982. Expertise in problem solving. In R. J. Sternberg (Ed.), ***Advances in the Psychology of Human Intelligence***, Vol. 1: 7-75. Hillsdale, NJ: Erlbaum.
Coleman, J. S. 1988. Social capital in the creation of human capital. ***American Journal of Sociology***, 94: s95-s120.
Coleman, J. S. 1990. ***Foundations of Social Theory***. Cambridge, MA: Belknap Press of Harvard University Press.
Coleman, J. S., Katz, E., & Menzel, H. 1966. ***Medical Innovation***. New York: Bobbs-Merrill.

Combs, J. G. & Skill, M. S. 2003. Managerialist and human capital explanations for key executive pay premiums: a contingency perspective. ***Academy of Management Journal***, 46: 63-73.

Cool, K. & Henderson, J. 1998. Power and firm profitability in supply chains: French manufacturing industry in 1993. ***Strategic Management Journal***, 19: 909-926.

Corner, P. D., Kinicki, A. J., & Keats, B. W. 1994. Integrating organizational and individual information processing perspectives on choice. ***Organization Science***, 5: 294-308.

Coughlan, A. T. & Schmidt, R. M. 1985. Executive compensation, management turnover, and firm performance: an empirical investigation. ***Journal of Accounting and Economics***, 7: 43-66.

Cox, J. 2002. Boards find it harder to fill hot seats; scandals, legal threats make many decline slot, ***USA Today***.

Cronbach, L. J. & Furby, L. 1970. How we should measure "change" -- or should we? ***Psychological Bulletin***, 74: 68-80.

Cyert, R. M. & March, J. G. 1963. ***A Behavioral Theory of the Firm***. Englewood Cliffs, NJ: Prentice-Hall.

Dalton, D. R., Daily, C. M., Ellstrand, A. E., & Johnson, J. L. 1998. Meta-analytic reviews of board composition, leadership structure, and financial performance. ***Strategic Management Journal***, 19: 269-290.

Davis, G. F. 1991. Agents without principles? the spread of the poison pill through the intercorporate network. ***Administrative Science Quarterly***, 36: 583-613.

Davis, G. F. 2005. New directions in corporate governance. ***Annual Review of Sociology***, 31: 143-162.

Davis, G. F., Diekmann, K. A., & Tinsley, C. H. 1994. The decline and fall of the conglomerate firm in the 1980s: the deinstitutionalization of an organizational form. ***American Sociological Review***, 59: 547-570.

Davis, G. F. & Thompson, T. A. 1994. A social movement perspective on corporate control. ***Administrative Science Quarterly***, 39: 141-173.

Davis, R. & Duhaime, I. M. 1989. ***Business level data disclosed under FASB No. 14: effective use in strategic management research***. Paper presented at the Academy of Management Annual Conference, Washington, DC.

Dearborn, D. C. & Simon, H. A. 1958. Selective perception: a note on the departmental identifications of executives. ***Sociometry***, 21: 140-144.

Deci, E. L., Koestner, R., & Ryan, R. M. 1999. A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. ***Psychological Bulletin***, 125: 627-668.

Dollinger, M. J. 1984. Environmental boundary spanning and information processing effects on organizational performance. ***Academy of Management Journal***, 27: 351-368.

Domhoff, G. W. 1970. ***The Higher Circles: The Governing Class in America***. New York: Random House.

Domhoff, G. W. 1983. ***Who Rules America Now? A View for the '80s***. New York: Simon & Schuster.

Edwards, J. R. 1994. The study of congruence in organizational behavior research: critique and a proposed alternative. ***Organizational Behavior and Human Decision Processes***, 58: 51-100.

Eisenhardt, K. M. 1989. Agency theory: an assessment and review. ***Academy of Management Review***, 14: 57-74.

Eriksson, G. 1991. Human capital investments and labor mobility. ***Journal of Labor Economics***, 9: 236-254.

Fama, E. F. 1980. Agency problems and the theory of the firm. ***Journal of Political Economy***, 88: 288-307.

Fama, E. F. & Jensen, M. C. 1983. Separation of ownership and control. ***Journal of Law and Economics***, 26.

Felton, R. F. & Watson, M. 2002. Change across the board. ***McKinsey Quarterly***: 31-45.

Ferris, S. P., Jagannathan, M., & Pritchard, A. C. 2003. Too busy to mind the business? monitoring by directors with multiple board appointments. ***Journal of Finance***, 59: 1087-1111.

Filatotchev, I. & Bishop, K. 2002. Board composition, share ownership, and 'underpricing' of U.K. IPO firms. ***Strategic Management Journal***, 23: 941-955.

Finkelstein, S. 1992. Power in top management teams - dimensions, measurement, and validation. ***Academy of Management Journal***, 35: 505-538.

Finkelstein, S. & D'Aveni, R. A. 1994. CEO duality as a double-edged sword: how boards of directors balance entrenchment avoidance and unity of command. ***Academy of Management Journal***, 37: 1079-1108.

Finkelstein, S. & Hambrick, D. C. 1989. Chief executive compensation: a study of the intersection of markets and political processes. ***Strategic Management Journal***, 10: 121-134.

Finkelstein, S. & Hambrick, D. C. 1990. Top-management team tenure and organizational outcomes: the moderating role of managerial discretion. ***Administrative Science Quarterly***, 35: 484-503.

Finkelstein, S. & Hambrick, D. C. 1996. ***Strategic Leadership: Top Executives and Their Effects on Organizations***. New York: West.

Finkelstein, S. & Mooney, A. C. 2003. Not the usual suspects: how to use board process to make boards better. ***Academy of Management Executive***, 17: 101-113.

Forbes, D. P. & Milliken, F. J. 1999. Cognition and corporate governance: understanding boards of directors as strategic decision-making groups. ***Academy of Management Review***, 24: 489-505.

Friedman, M. & Savage, L. J. 1948. The utility analysis of choices involving risk. ***Journal of Political Economy***, 56: 279-304.

Galbraith, J. R. 1974. Organization design: an information processing view. ***Interfaces***, 4: 28-36.

Galunic, D. C. & Anderson, E. 2000. From security to mobility: generalized investments in human capital and agent commitment. ***Organization Science***, 11: 1-20.

Gargiulo, M. & Benassi, M. 2000. Trapped in your own net? network cohesion, structural holes, and the adaptation of social capital. ***Organization Science***, 11: 183-196.

Gerhart, B. & Milkovich, G. T. 1990. Organizational differences in managerial compensation and financial performance. ***Academy of Management Journal***, 33: 663-691.

Gilson, S. C. 1990. Bankruptcy, boards, banks, and blockholders: evidence on changes in corporate ownership and control when firms default. ***Journal of Financial Economics***, 27: 355-387.

Gimeno, J., Folta, T. B., Cooper, A. C., & Woo, C. Y. 1997. Survival of the fittest? entrepreneurial human capital and the persistence of underperforming firms. ***Administrative Science Quarterly***, 42: 750-783.

Gompers, P., Ishii, J., & Metrick, A. 2003. Corporate governance and equity prices. ***Quarterly Journal of Economics***, 118: 107-155.

Goodstein, J., Gautam, K., & Boeker, W. 1994. The effects of board size and diversity on strategic change. ***Strategic Management Journal***, 15: 241-250.

Granovetter, M. 1985. Economic action and social structure: the problem of embeddedness. ***American Journal of Sociology***, 91: 481-510.

Gulati, R., Nohria, N., & Zaheer, A. 2000. Strategic networks. ***Strategic Management Journal***, 21: 203-215.

Gulati, R. & Westphal, J. D. 1999. Cooperative or controlling? The effects of CEO-board relations and the content of interlocks on the formation of joint ventures. ***Administrative Science Quarterly***, 44: 473-506.

Haleblian, J. & Finkelstein, S. 1999. The influence of organizational acquisition experience on acquisition performance: a behavioral learning perspective. ***Administrative Science Quarterly***, 44: 29-56.

Hambrick, D. C., Cho, T. S., & Chen, M.-J. 1996. The influence of top management team heterogeneity on firms' competitive moves. ***Administrative Science Quarterly***, 41: 659-684.

Hambrick, D. C. & Mason, P. A. 1984. Upper echelons: the organization as a reflection of its top managers. ***Academy of Management Review***, 9: 193-206.

Harris, D. & Helfat, C. 1997. Specificity of CEO human capital and compensation. ***Strategic Management Journal***, 18: 895-920.

Haunschild, P. R. 1993. Interorganizational imitiation: the impact of interlocks on corporate acquisition activity. ***Administrative Science Quarterly***, 38: 564-592.

Haunschild, P. R. 1994. How much is that company worth? interorganizational relationships, uncertainty, and acquisition premiums. ***Administrative Science Quarterly***, 39: 391-411.

Haveman, H. A. 1993. Organizational size and change: diversification in the savings and loan industry after deregulation. ***Administrative Science Quarterly***, 38: 20-50.

Henderson, A. D. & Fredrickson, J. W. 1996. Information-processing demands as a determinant of CEO compensation. ***Academy of Management Journal***, 39: 575-606.

Hermalin, B. E. & Weisbach, M. S. 1988. The determinants of board composition. ***RAND Journal of Economics***, 19: 589-606.

Hermalin, B. E. & Weisbach, M. S. 1991. The effects of board composition and direct incentives on firm performance. ***Financial Management***, Winter: 101-112.

Hill, C. W. L. & Hoskisson, R. E. 1987. Strategy and structure in the multiproduct firm. ***Academy of Management Review***, 12: 331-341.
Hillman, A. J. & Dalziel, T. 2003. Boards of directors and firm performance: integrating agency and resource dependence perspectives. ***Academy of Management Review***, 28: 383-396.
Hitt, M. A., Bierman, L., Shimizu, K., & Kochar, R. 2001. Direct and moderating effects of human capital on strategy and performance in professional service firms: a resource-based perspective. ***Academy of Management Journal***, 44: 13-28.
Hitt, M. A. & Tyler, B. B. 1991. Strategic decision models: integrating different perspectives. ***Strategic Management Journal***, 12: 327-351.
Hofmann, M. A. 2003. Tort costs jump to $233 billion. ***Business Insurance***, 37: 3-4.
Huselid, M. A. 1995. The impact of human resource management practices on turnover, productivity, and corporate financial performance. ***Academy of Management Journal***, 38: 635-672.
Jensen, M. C. & Meckling, W. H. 1976. Theory of the firm: managerial behavior, agency costs, and ownership structure. ***Journal of Financial Economics***, 3: 305-350.
Johnson, J. L., Daily, C. M., & Ellstrand, A. E. 1996. Boards of directors: a review and research agenda. ***Journal of Management***, 22: 409-438.
Jones, G. R. & Hill, C. W. L. 1988. Transaction cost analysis of strategy-structure choice. ***Strategic Management Journal***, 9: 159-172.
Judge, W. Q. & Zeithaml, C. P. 1992. Institutional and strategic choice perspectives on board involvement in the strategic decision process. ***Academy of Management Journal***, 35.
Kimberly, J. R. 1976. Organizational size and the structuralist perspective: a review, critique, and proposal. ***Administrative Science Quarterly***, 21: 571-597.
Kimberly, J. R. & Evanisko, M. J. 1981. Organizational innovation: the influence of individual, organizational, and contextual factors on hospital adoption of technological and administrative innovations. ***Academy of Management Journal***, 24: 689-713.
Klausner, M., Munger, N., Munger, C., Black, B. S., & Cheffins, B. 2005. Outside directors' liability: have Worldcom and Enron changed the rules? ***Stanford Lawyer***, 71: 36-39.
Knight, D., Pearce, C. L., Smith, K. G., Olian, J. D., Sims, H. P., Jr., Smith, K. A., & Flood, P. 1999. Top management team diversity, group process, and strategic consensus. ***Strategic Management Journal***, 20: 445-465.
Knowledge at Wharton. 2003a. Board members facing public scrutiny should bone up on finance, accounting: Wharton.
Knowledge at Wharton. 2003b. Those who sit on company boards face a new, tougher job description: Wharton.
Koenig, T. & Gogel, R. 1981. Interlocking corporate directorships as a social network. ***American Journal of Economics and Sociology***, 40: 37-50.
Kosnik, R. D. 1987. Greenmail: a study of board performance in corporate governance. ***Administrative Science Quarterly***, 32: 163-185.
Kosnik, R. D. 1990. Effects of board demography and directors' incentives on corporate greenmail decisions. ***Academy of Management Journal***, 33: 129-150.

Krackhardt, D. 1990. Assessing the political landscape: Structure, cognition, and power in organizations. ***Administrative Science Quarterly***, 35: 342-369.
Lawshe, C. H. & Schucker, R. E. 1959. The relative efficiency of four test weighting methods in multiple prediction. ***Educational and Psychological Measurement***, 19: 103-114.
Loewenstein, J., Thompson, L. L., & Gentner, D. 1999. Analogical encoding facilitates knowledge transfer in negotiation. ***Psychonomic Bulletin & Review***, 6: 586-597.
Lorsch, J. W. & MacIver, E. 1989. ***Pawns or Potentates: The Reality of America's Corporate Boards***. Boston: Harvard Business School Press.
Lubatkin, M., Merchant, H., & Srinivasan, N. 1993. Construct validity of some unweighted product-count diversification measures. ***Strategic Management Journal***, 14: 433-449.
Mace, M. L. 1986. ***Directors: Myth and Reality*** (2nd ed.). Boston: Harvard Business School Press.
Marschak, J. 1950. Rational behavior, uncertain prospects, and measurable utility. ***Econometrica***, 18: 111-141.
Masters, B. A. & Day, K. 2005. 10 Ex-Worldcom directors agree to settlement, ***Washington Post***: 01.
McNamara, G., Moon, H., & Bromiley, P. 2002. Banking on commitment: intended and unintended consequences of an organization's attempt to attenuate escalation of commitment. ***Academy of Management Journal***, 45: 443-452.
Miller, D. & Shamsie, J. 2001. Learning across the life cycle: experimentation and performance among the Hollywood studio heads. ***Strategic Management Journal***, 22: 725-745.
Milton, L. P. & Westphal, J. D. 2005. Identity confirmation networks and cooperation in work groups. ***Academy of Management Journal***, 48: 191-212.
Mincer, J. 1997. The production of human capital and the life cycle of earnings: variations on a theme. ***Journal of Labor Economics***, 15: S26-S47.
Mintzberg, H. 1975. The manager's job: folklore and fact. ***Harvard Business Review***, 53: 49-61.
Mitchell, T. R. 1997. Matching motivational strategies with organizational contexts. In L. L. Cummings & B. M. Staw (Eds.), ***Research in Organizational Behavior***, Vol. 19: 57-149. Greenwich: JAI Press.
Mizruchi, M. S. 1983. Who controls whom? an examination of the relation between management and boards of directors in large American corporations. ***Academy of Management Review***, 8: 426-435.
Mooney, E. V. 2003. Shareholder class action suits spike in 2002, ***RCR Wireless News***, Vol. 22: 24-26.
Mosteller, F. & Nogee, P. 1951. An experimental measurement of utility. ***Journal of Political Economy***, 59: 371-404.
Ocasio, W. 1994. Political dynamics and the circulation of power: CEO succession in U.S. industrial corporations, 1960-1990. ***Administrative Science Quarterly***, 39: 285-312.
Ocasio, W. 1995. The enactment of economic adversity: a reconciliation of theories of failure-induced change and threat-rigidity. In L. L. Cummings & B. M. Staw

(Eds.), ***Research in Organizational Behavior***, Vol. 17: 287-331. Greenwich: JAI Press.
Palepu, K. 1985. Diversification strategy, profit performance and the entropy measure. ***Strategic Management Journal***, 6: 239-255.
Palmer, D. & Barber, B. M. 2001. Challengers, elites, and owning families: a social class theory of corporate acquisitions in the 1960s. ***Administrative Science Quarterly***, 46: 87-120.
Patton, A. & Baker, J. C. 1987. Why won't directors rock the boat? ***Harvard Business Review***, 65: 10-14.
Pearce, J. A., II & Zahra, S. A. 1991. The relative power of CEOs and boards of directors: associations with corporate performance. ***Strategic Management Journal***, 12: 135-153.
Pelled, L. H., Eisenhardt, K. M., & Xin, K. R. 1999. Exploring the black box: an analysis of work group diversity, conflict, and performance. ***Administrative Science Quarterly***, 44: 1-28.
Pennings, J. M., Lee, K., & van Witteloostuijn, A. 1998. Human capital, social capital, and firm dissolution. ***Academy of Management Journal***, 41: 425-440.
Perry, T. & Peyer, U. C. 2002. Board seat accumulation by executives: a shareholder's perspective. ***Working Paper***.
Pfeffer, J. 1972. Size and composition of corporate boards of directors: the organization and its environment. ***Administrative Science Quarterly***, 17: 218-228.
Pfeffer, J. & Davis-Blake, A. 1986. Administrative succession and organizational performance: How administrator experience mediates the succession effect. ***Academy of Management Journal***, 29: 72-83.
Pfeffer, J. & Salancik, G. R. 1978. ***The External Control of Organizations***. New York: Harper and Row.
Powell, W. W., Koput, K. W., & Smith-Doerr, L. 1996. Interorganizational collaboration and the locus of innovation: networks of learning in biotechnology. ***Administrative Science Quarterly***, 41: 116-145.
Rogers, E. M. 1995. ***Diffusion of Innovations*** (4th ed.). New York: Free Press.
Sahlman, W. A. 1990. Why sane people shouldn't serve on public boards. ***Harvard Business Review***, 68: 28-32.
Salancik, G. R. & Pfeffer, J. 1974. The bases and use of power in organizational decision making: the case of a university. ***Administrative Science Quarterly***, 19: 453-573.
Sanders, W. G. 2001. Behavioral responses of CEOs to stock ownership and stock option pay. ***Academy of Management Journal***, 44: 477-492.
Sanders, W. G. & Boivie, S. 2004. Sorting things out: valuation of new firms in uncertain markets. ***Strategic Management Journal***, 25: 167-186.
Schmidt, F. L. 1971. The relative efficiency of regression and simple unit weights in applied differential psychology. ***Educational and Psychological Measurement***, 31: 699-714.
Schmidt, F. L. & Kaplan, L. B. 1971. Composite vs. multiple criteria: a review and resolution of the controversy. ***Personnel Psychology***, 24: 419-434.
Schneider, B. 1987. The people make the place. ***Personnel Psychology***, 40: 437-453.

Schoemaker, P. J. H. 1982. The expected utiltiy model: its variants, purposes, evidence and limitations. ***Journal of Economic Literature***, 20: 529-563.
Schwenk, C. R. 1984. Cognitive simplification processes in strategic decision-making. ***Strategic Management Journal***, 5: 111-128.
Seibert, S. E., Kraimer, M. L., & Liden, R. C. 2001. A social capital theory of career success. ***Academy of Management Journal***, 44: 219-237.
Simon, H. A. 1959. Theories of decision-making in economics and behavioral science. ***American Economic Review***, 49: 253-283.
Singley, M. K. & Anderson, J. R. 1989. ***The Transfer of Cognitive Skill***. Cambridge, MA: Harvard University Press.
Srinivasan, S. 2004. Consequences of financial reporting failure for outside directors: evidence from accounting restatements. ***Working Paper***.
Stanley, J. C. & Wang, M. D. 1970. Weighting test items and test-item options, an overview of the analytic and empirical literature. ***Educational and Psychological Measurement***, 30: 21-35.
Staw, B. M., Sandelands, L. E., & Dutton, J. E. 1981. Threat-rigidity effects in organizational behavior: A multilevel analysis. ***Administrative Science Quarterly***, 26: 501-524.
Sullivan, D. 1994. Measuring the degree of internationalization of a firm. ***Journal of International Business Studies***, 25: 325-342.
Taylor, R. N. 1975. Age and experience as determinants of managerial information processing and decision making performance. ***Academy of Management Journal***, 24: 453-470.
Taylor, W. 1990. Can big owners make a big difference? ***Harvard Business Review***, 68: 70.
Tetlock, P. E. 2000. Cognitive biases and organizational correctives: do both disease and cure depend on the politics of the beholder? ***Administrative Science Quarterly***, 45: 293-326.
Thomas, J. B., Clark, S. M., & Gioia, D. A. 1993. Strategic sensemaking and organizational performance: linkages among scanning, interpretation, action, and outcomes. ***Academy of Management Journal***, 36: 239-270.
Thompson, J. D. 1967. ***Organizations in Action: Social Science Bases of Administrative Theory***. New York: McGraw-Hill.
Tihanyi, L., Johnson, R. A., Hoskisson, R. E., & Hitt, M. A. 2003. Institutional ownership differences and international diversification: the effects of boards of directors and technological opportunity. ***Academy of Management Journal***, 46: 195-211.
Tripsas, M. & Gavetti, G. 2000. Capabilities, cognition, and inertia: evidence from digital imaging. ***Strategic Management Journal***, 21: 1147-1161.
Tversky, A. & Kahneman, D. 1974. Judgment under uncertainty: Heuristics and biases. ***Science***, 185: 1124-1131.
Useem, M. 1979. The social organization of the American business elite and participation of corporation directors in the governance of American institutions. ***American Sociological Review***, 44: 553-572.

Useem, M. 1982. Classwide rationality in the politics of managers and directors of large corporations in the United States and Great Britain. ***Administrative Science Quarterly***, 27: 199-226.

Uzzi, B. 1997. Social structure and competition in interfirm networks: the paradox of embeddedness. ***Administrative Science Quarterly***, 42: 35-67.

Uzzi, B. 1999. Embeddedness in the making of financial capital: how social relations and networks benefit firms seeking financing. ***American Sociological Review***, 64: 481-505.

Van Eerde, W. & Thierry, H. 1996. Vroom's expectancy models and work-related criteria: a meta-analysis. ***Journal of Applied Psychology***, 81: 575-586.

Wanous, J. P., Keon, T. L., & Latack, J. C. 1983. Expectancy theory and occupancy/organizational choice: a review and test. ***Organizational Behavior and Human Performance***, 32: 66-86.

Weigelt, K. & Camerer, C. 1988. Reputation and corporate strategy: a review of recent theory and applications. ***Strategic Management Journal***, 9: 443-454.

Weiss, A. 1995. Human capital vs. signalling explanations of wages. ***Journal of Economic Perspectives***, 9: 133-154.

Westphal, J. D. 1998. Board games: how CEOs adapt to increases in structural board independence from management. ***Administrative Science Quarterly***, 43: 511-538.

Westphal, J. D. 1999. Collaboration in the boardroom: behavioral and performance consequences of CEO-board social ties. ***Academy of Management Journal***, 42: 7-24.

Westphal, J. D. & Khanna, P. 2003. Keeping directors in line: social distancing as a control mechanism in the corporate elite. ***Administrative Science Quarterly***, 48: 361-398.

Westphal, J. D. & Milton, L. P. 2000. How experience and network ties affect the influence of demographic minorities on corporate boards. ***Administrative Science Quarterly***, 45: 366-399.

Westphal, J. D. & Zajac, E. J. 1995. Who shall govern? CEO/board power, demographic similarity, and new director selection. ***Administrative Science Quarterly***, 40: 60-84.

Westphal, J. D. & Zajac, E. J. 1998. The symbolic management of stockholders: corporate governance reforms and shareholder reactions. ***Administrative Science Quarterly***, 43: 127-153.

Wiersema, M. F. & Bantel, K. A. 1992. Top management team demography and corporate strategic change. ***Academy of Management Journal***, 35: 91-121.

Williams, K. Y. & O'Reilly, C. A., III. 1998. Demography and diversity in organizations: a review of 40 years of research. In B. M. Staw & L. L. Cummings (Eds.), ***Research in Organizational Behavior***, Vol. 20: 77-140. Greenwich: JAI Press.

Yermack, D. 2003. Remuneration, retention, and reputation incentives for outside directors. ***Working Paper***.

Zajac, E. J. & Bazerman, M. H. 1991. Blind spots in industry and competitor analysis: implications of interfirm (mis)perceptions for strategic decisions. ***Academy of Management Review***, 16: 37-56.

Zajac, E. J. & Westphal, J. D. 1994. The costs and benefits of managerial incentives and monitoring in large U.S. corporation: when is more not better? ***Strategic Management Journal***, 15: 121-142.

Zajac, E. J. & Westphal, J. D. 1995. Accounting for the explanations of CEO compensation: substance and symbolism. ***Administrative Science Quarterly***, 40: 283-308.

Zajac, E. J. & Westphal, J. D. 1996. Director reputation, CEO-board power, and the dynamics of board interlocks. ***Administrative Science Quarterly***, 41: 507-530.

Zajac, E. J. & Westphal, J. D. 2002. Intraorganizational Economics. In J. A. C. Baum (Ed.), ***The Blackwell Companion to Organizations***: 233-255. Malden, MA: Blackwell.

Zajac, E. J. & Westphal, J. D. 2004. The social construction of market value: institutionalization and learning perspectives on stock market reactions. ***American Sociological Review***, 69: 433-457.

Zald, M. N. 1969. The power and functions of boards of directors: a theoretical synthesis. ***American Journal of Sociology***, 75: 97-111.

Zeitlin, M. 1974. Corporate ownership and control: the large corporation and the capitalist class. ***American Journal of Sociology***, 79: 1073-1119.

Zeitlin, M., Ewen, L. A., & Ratcliff, R. E. 1974. "New Princes" for old? the large corporate and the capitalist class in Chile. ***American Journal of Sociology***, 80: 87-123.

Vita

Steven Robert Boivie was born in Pocatello, Idaho on June 18, 1975 and is the son of Lorraine Carol Boivie and Richard Lynn Boivie. After completing his high school education at Cardston High School in Cardston, Alberta Canada in 1993, he entered Utah State University in Logan, UT. He took a two-year hiatus from his education to complete a mission for The Church of Jesus Christ of Latter-day Saints in the California, San Fernando Mission. After his mission he resumed his education and completed his Bachelor of Science degree in Business Management in May 1999 from Utah State University. In September of 1999 he began working on his Master of Organizational Behavior Degree at Brigham Young University in Provo, UT. During the pursuit of this degree he worked as a teaching assistant for the undergraduate Organizational Behavior and Organizational Effectiveness courses. He completed the MOB degree in April 2001. In September 2001 he entered the McCombs School of Business at the University of Texas at Austin. In 2004 he taught an undergraduate course in Strategic Management.

Steven is the coauthor of two publications. His first publication was coauthored with Wm. Gerard Sanders and appeared in the *Strategic Management Journal* in 2004. It is titled: Sorting Things Out: Valuation of New Firms in Uncertain Markets. His second publication, titled: The Strategic Impetus for Social Network Ties: Reconstituting Broken CEO Friendship Ties was coauthored with James D. Westphal and Daniel Han Ming Chng and is scheduled to be published in the Strategic Management Journal in 2006.

Permanent address: 11500 Jollyville Rd. #3014, Austin, TX 78759

This dissertation was typed by the author.